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EYE MANIFESTATIONS OF HEAD INJURIES

DONALD J. LYLE, M.D.
CINCINNATI

The time seems appropriate for a discussion of eye manifestations of head injuries. There are three great classes in which most of these injuries are found. These are (1) the increasing number of automobile and other travel accidents, (2) the industrial accidents multiplied by the acceleration of production to meet the war demand and (3) the head injuries of war itself. This last class appears of less importance at this time to those of us who remain in civilian practice. Nevertheless there is no noticeable difference between the injuries of these three classes. A head injury from a shell fragment and that from a metallic fragment from the bursting of a rapidly revolving piece of machinery are not unlike. Needless to say, travel and industrial accidents are common among the military forces, and firearm injuries are only too prevalent in civilian life. Injuries to the head produce a number of eye symptoms of great importance. Frequently, from them one is able to determine the severity of the cerebral damage, its location and extent. Eye symptoms are produced by a relatively mild blow to the head, when one sees "stars," as well as from blows severe enough to render the victim unconscious. The chief concern in head injuries is with the brain itself and not the skull, which may have been badly damaged or show no evidence of injury. The result of head injuries, as far as they affect the brain, may be classified as concussion, contusion, laceration and compression. A similar classification might be applied to injuries to the eyeball.

CONCUSSION

Concussion results in a curtailment, more or less, of cerebral function due to a jarring of the central nervous system. Grossly, no change may be in evidence; mollecularly the brain may be disturbed. However, in both the brain and the retina of the eye there is usually some ischemia in the early stage with a later development of venous congestion and edema.

If consciousness is not lost, or on its return, the patient usually exhibits a fogginess of thought with perhaps loss of memory of events just prior to the accident or immediately following it. Vertigo, nystagmus, dizziness and frequently nausea and vomiting indicate a disturbance in the vestibular mechanism. The medullary centers also may be implicated with the production of embarrassed respiration and circulation, which may lead to fatal termination.

In these cases, during unconsciousness, the pupils are usually constricted and fixed, probably because of the general cerebral irritation. Irritative conjugate deviation of the eyes may also be present for a short period.

A condition of major importance immediately after an injury resulting in concussion is the state of shock. There may be loss of consciousness for varying periods, during which time the eyes are closed and the corneal reflex is absent. The pupils are frequently constricted and react, if at all, only sluggishly to light. Other general symptoms are rapid pulse, shallow respiration, low temperature, cold, clammy and pale skin and muscular relaxation.

The retina, like the brain, may become ischemic, with later engorgement of the veins and secondary edema from cerebral concussion or from concussion of the globe itself. This is probably due to a sudden vasoconstriction followed by a vasodilatation (Berlin's retinitis or retinitis commotio). This condition may be accompanied by hemorrhages between the sclera and the choroid. The papilla may show slight edema or, at least, some venous stasis. Localized edema of the retina may occasionally be noted, especially at the posterior pole of the eye (angiopathic traumatic edema of the retina of Purtscher). The causes of this condition are hypothetical. They may be due to (1) a forcing of the cerebrospinal fluid from the nerve sheath into the retina possibly through the perivascular lymph spaces, (2) tears in the vessel walls and retina, (3) fat emboli and (4) autonomic disturbances probably chiefly affecting the vascular system.

CONTUSION

Contusion is a bruising of the brain usually as a result of its sudden impact against the skull wall. The trauma may occur either on the side of the impact or by contrecoup on the opposite side. A skull fracture or laceration of the scalp does not necessarily accompany a cerebral contusion. The most frequent sites of contusions are at the temporal poles and the under side of the frontal lobes, areas past which the nerves and blood vessels course to and from the eyes (fig. 1).

Contusion of the brain results in capillary hemorrhages and edema within its substance. General contusion with edema and petechial hemorrhages is called traumatic encephalitis. The meninges, blood vessels and nerves in the vicinity are usually implicated with the production of meningeal inflammation and adhesions, hemorrhages which may be extradural, subdural or subarachnoid, and paralysis or anesthesia.

The eyeball may suffer contusion resulting in edema, hemorrhages and exudates. These contusions are usually produced by injuries to the orbital tissues surrounding the eye and to the bony wall of the orbit. An example of this is that of a man who was struck by a 0.38 caliber bullet. The bullet (figs. 2 and 3) entered the lower right lid from the left side, just missing the nose and the inferior orbital rim at its entrance.

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It passed through the soft tissues on the floor of the orbit and broke through the zygomatic bone to lodge in the soft tissue near the temporomandibular joint. Loss of sight was immediate and there was profuse bleeding from the orbital wound. Bleeding into the

Fig. 1.—Basal skull fracture resulting in damage to the right inferior frontal lobe with destruction of the right olfactory and optic nerves.

anterior chamber prevented immediate view of the fundus. However, several weeks later retinal photographs were taken which revealed diffuse subretinal hemorrhages in the temporal half of the eye (fig. 4).

Fig. 2.—Position of a bullet and its course as indicated by fragments.

As the hemorrhage absorbed, vision returned save for a central scotoma of about 10 degrees. There appeared no rupture of the choroid or retina, which seemed likely at the time of the photograph.

LACERATION

Laceration of the brain may occur with severe closed injury or with penetrating wounds. Visible damage is present in the brain and meninges, evidenced by loss of continuity of tissue. This may occur on the same side as the impact or on the opposite side (contrecoup). Along with damage to the brain and the membranes, nerves and blood vessels may also be implicated.

In the eye, laceration, or a loss of continuity of tissue, may be due either to rupture of the coats of the eye or to penetration by foreign bodies. The choroid is probably most frequently ruptured, although the retina, because of its delicate structure, is usually ruptured with it. The tough sclera is able to withstand greater damage before giving way. Rupture of the choroid is probably more often induced indirectly than directly and more frequently by contrecoup than on the side of the applied force. The posterior pole of the eye is the most common site. The rupture is usually linear and extends in the vertical direction, straight or concentric with the disk margin. In by far the majority of cases it is temporal to the disk. More than one

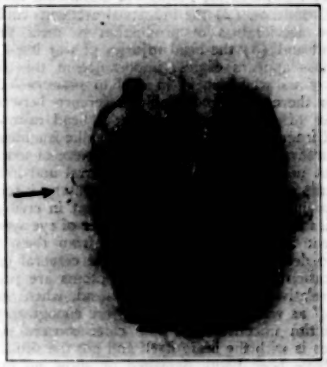

Fig. 3.—Fragments of bullet.

rupture may occur (fig. 5). Posterior pole ruptures are usually contrecoup; peripheral ruptures, which are less frequently encountered, are probably due to direct injury to the globe. Detachment of the retina usually resulting from tears may be caused by head injuries. Luxation or dislocation of the lens produced by breaking of the suspensory ligaments also occurs as the result of trauma to the head and eye.

COMPRESSION

As a result of damage to the brain and the meninges, with the production of edema, inflammation and hemorrhage and, possibly with the interference with cerebrospinal fluid circulation, pressure develops within the cranium. This causes compression of the brain. Eye changes are among the earliest and most important signs of increased intracranial pressure.

Papillary change, consisting of transparent edema, possibly with a few hemorrhages, is seen in early stages of compression and is usually in direct relation to the degree of severity of the injury. This condition is known as Putscher's retinal lesion or traumatic angiopathic retinosis. The early ischemia frequently is replaced by a venous congestion with hyperemia of

the papilla. Papilledema, it must be remembered, does not appear immediately. Most observers state that it develops usually between the third and the eighth day, though some report its presence earlier. The swelling from the papilla extends into the retina, and hemorrhages occur frequently in and about the nerve head.

As the compression increases, consciousness may be lost. The cornea becomes insensitive with loss of reflexes. On the side of the injury the pupil, which at first was contracted from irritation, becomes dilated and does not react to light. The opposite pupil may remain normal, with normal light reflex. Later it may also contract and then dilate as it becomes involved in the compression.

HEMORRHAGE

Cerebral hemorrhages occurring at the time of the injury may be checked spontaneously or they may continue gradually to form hematomas. Hemorrhages may occur later as the result of cleavage or the giving away of damaged tissues. The hemorrhage may be extradural or subdural, subarachnoid or intraventricular or in the tissues of the brain.

At the time of the injury the patient may or may not lose consciousness. If he has been rendered unconscious he may continue in that state for an indefinite period of time. A later lapse or return to unconsciousness after a lucid interval following an injury almost certainly indicates increasing intracranial pressure, which may be produced by cerebral edema, hydrocephalus or inflammation but most frequently by hemorrhage.

Fig. 4.—Damage to the retina from the passage of a bullet through the orbit.

Hemorrhages are classified as to their general location and localized by the special symptoms they produce. Extradural hemorrhage from an injured middle meningeal artery is frequent, although it may occur elsewhere. The following is a history of a severe extradural hemorrhage:

R. R., a young man, fell 35 feet and suffered a linear skull fracture through the right parietal and temporal bones. There was no evidence of depression. He was not unconscious when picked up and was able to answer questions intelligently. But when a doctor saw him an hour later at the hospital he was unconscious. He remained in coma for several days, during which time he would occasionally cry out loudly. There was a paralysis of the left arm and leg subsequent to his admission to the hospital. There was incontinence of the bowels and bladder.

Eye examination showed early edema of the disks. On the third day venous congestion and on the fourth day papilledema developed in both eyes. The right pupil was larger than the left. There was conjugate deviation of the eyes (and head) to the right. Other cranial nerves could not be examined because of the patient's condition. Further neurologic examination is omitted. The spinal fluid pressure was 150 mm. of water. The fluid was yellow and contained red blood cells. There was no increase in proteins.

An opening was made in the right temporal region and an enormous extradural hematoma, which was well organized, was evacuated.

Extradural or subdural hematomas occur frequently in head injuries and may attain great size, producing symptoms of increased intracranial pressure (fig. 6). Papilledema develops; the ipsilateral pupil is usually dilated. Eye muscle paralysis is fairly common. If the patient is conscious, homonymous hemianopsia may be found. In infants, subdural hematoma must be differentiated from hydrocephalus, as there is a progressive enlarging of the head as the intracranial pressure from the developing hematoma increases.

Fig. 5.—A double contrecoup rupture of the choroid and retina from a blow on the eye.

Subarachnoid hemorrhages are common at the base of the brain, where most trauma is to the temporal and frontal lobes. Hemorrhages here occupy the interpeduncular and chiasmatic cisterns through which pass the nerves to the eyes. For this reason paresis or paralysis of the muscles of the eyes and hyperesthesia or anesthesia of the cornea are frequently encountered.

Intracerebral hemorrhages usually occur immediately at the time of the injury and result frequently in instant and continuous unconsciousness. In these cases, symptoms on the part of the eyes may arise. However, if the damage or resulting hemorrhage is large the patients do not usually survive long.

Pressure symptoms from hemorrhage, as well as from the other causes, frequently affect the pupils of the eyes. These changes were mentioned in the discussion of compression but their importance as a clinical symptom is so great that their reactions will be described again. Usually, on the side of the injury,

Fig. 6.—Extensive extradural hematoma from injury to the middle meningeal artery.

the pupil at first, and for a short period only, becomes contracted. It then dilates and becomes fixed. That is, it does not react to light. The other pupil may remain normal in size and reflex action but usually

follows its fellow and becomes dilated and fixed as its nerve supply is involved in the extending hematoma. Whether these pupillary actions are the result of irritation and pressure on the parasympathetic nerve fibers that accompany the oculomotor nerve through the interpeduncular cistern and middle fossa or whether they are caused by irritation or pressure on certain cortical areas which are known to produce pupillary changes is not definitely understood.

If a patient is seen within a short time after injury and has a dilated and fixed pupil on one side, it will be due, almost without exception, to a laceration of the third nerve or its nucleus. On the other hand, if it begins some time after the accident and is progressive, it is almost without exception due to an intracranial hemorrhage, which in most instances is an extradural clot. Lesions of the first type are usually associated with ptosis of the lid, indicating a complete

Fig. 7.—Pin shot in the right eye and orbit.

nerve lesion. The dilatation that occurs with expanding lesions is almost entirely confined to the pupil and does not involve, as a rule, the lid or the extraocular muscles. It is probably due to the forcing of the tip of the temporal lobe downward by the incisura of the tentorium, thereby exerting pressure on the brain stem.

As the state of the pupil changes frequently following a cerebral injury and as these changes reveal important information concerning the severity of the trauma and the presence of complications, the eye should be kept under continued observation. Because of the importance of pupillary reactions, mydriatics or cycloplegics should be prohibited, as they mask the symptoms. A competent ophthalmoscopist should be able to determine the state of the papilla and the immediate surrounding area of the fundus through an undilated pupil.

Conjugate deviation of the eyes is a frequent symptom of head injuries and is usually the result of pressure on or damage to the cerebral cortex. There occurs usually a horizontal conjugate deviation, which is frequently temporary or fleeting. The condition may be caused by an irritation to, destruction of or pressure on the eye motor area of the posterior third of the middle frontal convolution or of association tracts of fibers passing to this area from the visuopsychic cortical areas in the occipital and inferior parietal lobes (angular and supramarginal gyri). Whether the initial irritation subsides or a compensatory action takes place as the result of a bilateral supranuclear innervation, early conjugate deviations usually disappear. Permanent conjugate deviations are usually produced by brain stem lesions and may occur later. Vertical conjugate deviations usually arise from lesions implicating the upper part of the midbrain and are frequently accompanied by sympathetic symptoms such as somnolence. Reflex conjugate deviations instigated by the temporal and occipital lobes in response to auditory, vestibular and visual stimuli may possibly be found as a result of head trauma when at the time of the injury the special senses have been affected by a detonation, concussion or light flash such as might accompany an explosion.

CEREBRAL LOCALIZATION

Cerebral localization is made possible though the knowledge of the anatomy and physiology of the contents of the cranial cavity. We have seen that concussion and shock are general states of disturbed cerebration. Contusion may be general or local, and lacerations may be large or small. The causes of eye and other symptoms may be due to the effect of an irritation or destruction of, or pressure on, centers of nerves controlling visual or other functions. Foreign bodies may penetrate the skull to damage certain areas of the brain. Parts of the fractured skull may do likewise. Hemorrhages from certain vessels usually localize as hematoma, producing symptoms from pressure. Infections may complicate the injury.

Intracranial foreign bodies produce symptoms according to the area they penetrate or damage either directly or through subsequent inflammation and hemorrhage. They may introduce infection, which frequently complicates and renders quite serious an otherwise relatively favorable prognosis.

Damage to the occipital lobe results in visual field changes of a homonymous type. If the anterior portion is involved with the adjacent angular gyrus the visual psychic area is affected, resulting in the inability to comprehend and recognize visual perceptions. On the major side, which is usually the left, irritation may result in visual hallucinations. Sensory aphasia and types of apraxia may also be produced. Visual reflex eye movements may be affected also by damage to this area. Further forward, in the posterior frontal lobes, damage may result in disturbances of eye movements. Similar symptoms may result from injury to the aberrant fibers leading from these areas through the knee of the internal capsule and cerebral peduncle to the eye motor nuclei in the brainstem. The oculomotor, trochlear and abducens nuclei or nerves, as they course to the eye, may be injured. In like manner the facial nerve to the muscles of the lids, and the ophthalmic branch of the trigeminal, which is the sensory nerve of the eye and orbit, may be implicated. Occasionally, penetrating foreign bodies may affect the autonomic nervous system.

A youth aged 17 years was examined because of loss of vision in his right eye. The history revealed that two years before he sustained a multiple shot wound in the right eye and orbit. Light projection was present but poor. The eye showed no injection or inflammation. X-ray examination revealed the presence of many pin shot in the orbit, several of which were located within the globe (fig. 7). The patient was advised to keep the eye under observation, as it might cause trouble at any time.

Several years later, at the age of 20, the patient returned with an acutely inflamed eye. It was slightly proptosed. Hypopyon was present, nearly filling the anterior chamber. The vessels of the globe were much injected. The patient's temperature was 101 F. He was sent to the hospital, where the eye was eviscerated under local anesthesia. An injection of 5 cc. of milk was given. Following this the temperature ranged between 105 and 106 F. for seventy-two hours instead of the usual rise and fall in the course of six hours. The patient died several days later of cardiac failure. Autopsy was refused.

The history of the case in the interval between the two visits is interesting. The boy had gained very much weight, between 30 and 40 pounds (13.6-18 Kg.). He thought nothing of drinking half a case of Vichy water in a day or several pitchers of lemonade at one time. The output was in proportion. His studies at school were a little difficult for him, but he was well and he played center on the football team. There had been no trouble with his eyes until about a week prior to his return, when he stated he had "taken cold" and apparently "it had affected the injured eye."

This case presents a clinical picture of diabetes insipidus with polyuria and polydipsia, a disturbance of temperature regulation and adiposity. This is probably the result of damage to the autonomic nervous system with involvement of the tractus supraopticohypophysis to the posterior lobe of the pituitary gland (retinohypothalamico-pituitary fibers).

Fig. 8.—Multiple skull fractures of the occipitoparietal area.

Head injury may result in destruction of sympathetic centers, descending sympathetic fibers through the brain stem and cervical cord, and the ascending cervical nerve and ganglions. The smooth muscles of eye and lids are involved with the production of Horner's syndrome. This consists of miosis, ptosis and a relative (in appearance only) enophthalmos.

SKULL FRACTURES

Fractures of the vertex of the skull usually do not produce as many symptoms on the part of the eyes as do those at the base, where the many nerves and blood vessels passing to and from the eye and orbit may be implicated. However, fractures of the vault

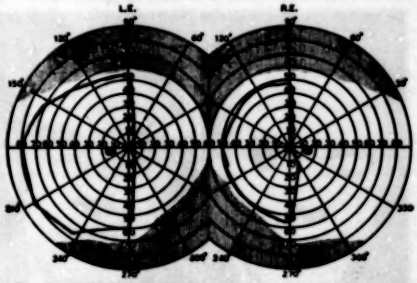

Fig. 9.—Visual fields showing homonymous hemianopsia from implication of the left optic radiations.

may produce eye symptoms by affecting the visuosensory and visuopsychic areas of the occipital and lower parietal lobes and the visuomotor center in the posterior frontal lobes. This may be accomplished through direct damage to the brain or through the pressure of hemorrhages or later by adhesions, cysts and abscesses. The following is an example:

A woman aged 25 suffered a badly comminuted skull fracture with a depression in the left occipital area (fig. 8). When first seen, shortly after the accident, the patient was unconscious. The pupils were contracted and equal. There appeared to be a paresis of both external rectus muscles, more pronounced on the right. On return to consciousness, the patient complained of visual hallucinations of a complex form. Ophthalmoscopic examination revealed no edema of the papilla or retina and no retinal hemorrhages. Further examination revealed vision of 20/30 in each eye and the presence of a right homonymous hemianopsia. This visual field change is a common finding in patients with visual hallucinations. A ventriculographic examination of the skull showed the posterior horn of the left ventricle displaced downward and laterally. This portion of the wall of the ventricle, which is partially surrounded by the optic radiations, was the site of the lesion that produced the visual field defect.

Fractures through the frontal areas of the skull may be comparatively insignificant even with implication of the brain, especially the right frontal lobe. If the nasal sinuses or cribriform plate are involved, the chances of infection increase. The orbit is frequently damaged. The eyeball, and more often the optic nerve, may be injured. The following case report is an example:

E. D., a man aged 20, received a penetrating wound through the right frontal area from an automobile accident, which produced a compound comminuted fracture. He was admitted to the hospital with the knob of the windshield frame projecting from the right side of his forehead.

The piece of metal was removed from the right frontal lobe, in which it had deeply penetrated along with particles of bone. The right temporal and frontal bones, including the roof of the orbit, were fragmented and removed from the wound with the macerated brain tissue.

Eye examination revealed proptosis of the right eye with very slight eye movement. The pupil was partially dilated and did not react to light. No light perception was present. The upper part of the fundus was seen indistinctly and seemed

normal, but the papilla and lower retina were hidden behind an extensive vitreous hemorrhage.

Three weeks later the area of the head wound was bulging and tense. Twenty cc. of subdural hydromic fluid was aspirated, the dura was incised and about 20 cc. more of sterile fluid was obtained. Two months later a cerebral fungus the size of a walnut had developed and was removed.

Fig. 10.—Right oculomotor paralysis caused by a basal skull fracture: *A*, ptosis; *B*, dilated pupil and external strabismus.

The eye became phthisical and was enucleated. Plastic surgery of the lids and orbit produced a fairly good cosmetic result. There remains quite a depression in the frontal temporal area where the skull is absent.

Fractures of the base of the skull frequently implicate the abducens nerves as they ascend the brain stem and abruptly turn forward through Dorello's canal and over the petrous ridge, which is a common point of injury. Paralysis of the abducens nerve is often found with increased intracranial pressure, and this finding itself is therefore of no localizing value.

Of the nerves to the eye muscles, the oculomotor nerve is involved next in frequency to the abducens. It may be affected as it passes through the orbital wall or may be damaged by hemorrhages in the interpeduncular space (fig. 10). Weber's syndrome, which implicates the emerging oculomotor nerve and the cerebral peduncle producing ipsilateral oculomotor paralysis with contralateral hemiplegia or paraplegia, has been reported as a result of hemorrhages following skull fractures. The trochlear nerve, although it pursues a long course around the brain stem to the orbit, is less frequently affected.

The facial and auditory nerves are possibly more frequently involved in basal skull fractures than are the motor nerves to the eyes. Implication of the facial nerve shows a lower motor type of lesion which affects the closure of the eyelids because of paralysis of the orbicularis oculi. With this condition, when one attempts to close the eyes, the globe is seen to roll upward and outward. This is called Bell's phenomenon. With involvement of the auditory nerve, hearing may be affected and nystagmus and vertigo may indicate vestibular irritation.

The optic nerve may become involved in its course from the globe to the optic chiasm, and other parts of the visual system may also be affected. Within the orbit a lesion between the globe and the entrance of the central retinal vessels, besides damaging the optic nerve, will usually destroy the blood supply to the anterior layers of the retina and to the papilla. A severe injury may produce an avulsion of the optic nerve, in which case there is a complete or partial tearing away of the nerve head from the globe, leaving bloodless vessels and a pale, cavernous papilla (fig. 11).

A lesion in the optic nerve farther back, though vision is immediately affected, may not produce evidence of damage in the eye until the atrophy has ascended to the papilla. Pallor of the disk appears at varying intervals, depending on the distance of the injury from the eye (fig. 12). Some observers believe that definite atrophy can be noted in three to eight weeks after the injury; however, the time may be much longer.

As a great number of fractures of the base of the skull extend into the orbit and the majority of orbital fractures extend into the optic foramen, the optic nerve is frequently involved in fractures in this location, especially as it is so securely attached to the roof of the canal. As a result of these injuries, vision is frequently seriously impaired by damage from severance of the nerve fibers or pressure on them. If the pressure can be relieved in time, vision may be restored. Therefore, in spite of the usual swelling and ecchymosis, if the state of the patient permits, visual fields should be charted as soon as feasible so that necessary operation can be resorted to with the hope of releasing the pressure on the optic nerve before atrophy develops.

The optic chiasm is well buffered and does not usually suffer in head injuries unless traction on one of the optic nerves tears it. In these cases the chiasm between the decussating nerves usually gives way, resulting in a bitemporal visual field defect.

Infection introduced into the wound may result in meningitis or abscess formation. Adhesions formed either from infection or from injury without sepsis may result in cyst formation, local arachnoiditis or general hydrocephalus. Epilepsy may also result from these adhesions. Osteomyelitis, cerebral fungi and other complications may arise.

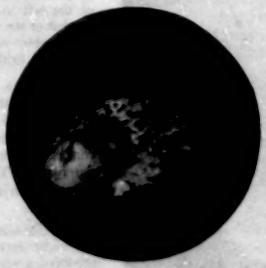

Fig. 11.—Avulsion of optic nerve resulting in a cavernous optic atrophy and exsanguinated blood vessels.

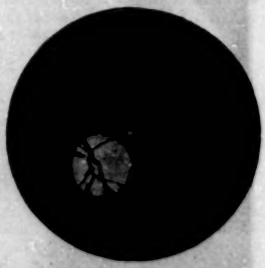

Fig. 12.—Optic atrophy resulting from an injury to the optic nerve in the optic foramen.

In basal fractures there may be an injury to the internal carotid artery as it passes through the cavernous sinus. Leakage here results in the formation of an arteriovenous aneurysm. These patients show a

unilateral proptosis with interference with normal eye movements. The lids are edematous, the conjunctiva is chemotic and there is an injection or engorgement of the vessels in the area. The retina and papilla frequently show edema and engorgement. Reduction of vision and occasionally diplopia are complained of by the patient. A bruit is usually heard over the area.

CONVALESCENCE AND SEQUELAE

Post-traumatic or postconcussion syndromes are frequently found and may be of functional or organic origin. It has been observed that when the patient is not pampered and consoled he may make a better recovery. If he is gotten up and about as soon as possible and is not kept quiet, he is apt to readjust more quickly and more completely. Worries and concern over the accident may interfere with recovery.

Rapid fatigue on the part of the eyes is frequently complained of, usually along with general exhaustion, unsteadiness, incoordination of movements and affected cerebration. Nystagmus and vertigo, occasionally with nausea, are common symptoms. Movements of the eyes, usually in all directions, may be an effort. Convergence is difficult. Reading a short period of time tires the patient. Spots "dance" before the eyes. Photophobia is complained of in some instances.

If the nerves or centers controlling eye movements have been implicated, imbalance of the muscles with diplopia, at least in the direction of action of the paralyzed muscle, may remain. Atrophy of the optic nerve, chiasm and tracts may result in loss of vision with ascending optic atrophy.

Visual field changes may remain as the result of irreparable damage to the visual system. Concentric constriction, central scotoma and sector defects are frequently encountered. Occasionally annular or ring scotomas have been reported. These field defects, especially annular and central scotomas and considerably constricted or tubular fields, must be considered in reference to fatigue and hysteria. Concentric constrictions may be due to cortical atrophy or hydrocephalus, although the latter is not found commonly following head injuries. However, although internal hydrocephalus is rare, external compensatory hydrocephalus is observed as the result of the replacement of atrophic brain tissue by the cerebrospinal fluid.

Some investigators believe that the concentric and possibly the annular field defects are confined to the retina of the eyes, possibly the optic nerves, and result from the violent vascular changes and disturbed metabolism produced by the injury.

ABSTRACT OF DISCUSSION

DR. A. D. RUEDEMANN, Cleveland: One is impressed by the large variety of head injuries that occur. The earliest injury is that of compression occurring at the time of birth, mostly in babies who have had forceps delivery. The additional compression of the forceps to the already compressed head is a factor in the production of hemorrhages at the base of the skull and undoubtedly accounts for a number of cases of squint. Also head injuries occur in the first decade in children who are learning to walk, and in careless or unguarded play. In the second decade are injuries associated with more serious and hazardous sports. Beginning in the third decade industrial injuries and accidents are in the majority. Industry has recognized the hazards associated with certain types of work and now provides protecting helmets. It is quite possible that these helmets will decrease the number of injuries, as have the goggles diminished the number of eye injuries. Severe intermittent headache subsequent to head injury is an excellent diagnostic symptom when most eye signs have disappeared. Trauma to the side of the head in the region of the orbit or directly to the eyeball may produce immediate blindness. The force of the blow may be transmitted across the bones of the orbit and produce a compression fracture in the canal, which can be revealed only by planograph method of x-ray. The second serious result of trauma to the orbit is enophthalmos. More serious is pulsating exophthalmos, produced mainly by fracture at the base coming up along the anterior clinoids and producing a tear in the internal carotid artery and the ophthalmic vein; this produces an exophthalmos by increasing the orbital content and is usually accompanied by much loss of vision. Gunshot wounds to the occipital region involving the visual centers give bizarre field changes without any changes in the eyegrounds. Head injuries and litigation are practically synonymous, and it requires careful study to justify a negative finding. The positive findings are usually demonstrable.

DR. C. W. RUTHERFORD, Indianapolis: War wounds are of greater value for research purposes than those met in civilian experience because there are many more of them available at a time and they can be studied in case groups by specially trained investigators. Holmes and Lister (*Brain* 39:34 [June] 1918) studied war wounds of the posterior section of the cranium with reference to their effects on visual fields. The result was a clarifying of cortical localization for macular, paramacular and peripheral vision. Destruction of the margin or lateral surface of the tip of the posterior pole of the brain was exhibited as a central scotoma; lesions only slightly forward from the tip produced paracentral scotomas, while injuries still more anterior in the area striata damaged the vesual cortex or the optic radiations or both and accounted for sharply demarcated quadrant anopsia, or homonymous hemianopsia to the vertical midline, in contrast to preservation of intact macular vision as met in cases of vascular impairment in civil practice. LaGrange (Atlas d'ophtalmoscopie de guerre, 1918, and Fractures of the Orbit and Injuries of the Eye in War, 1918) investigated wounds of the anterior section of the head and their typical effects on the eyeball and its contents. Ocular lesions were located uniformly anterior to the point of contact in contusions of the globe. Constant relations existed between the site of a lesion and the course of a projectile. Hole in the macula was long accepted as a result of trauma. Almost any patient can be prompted to recall a bump on the head, but few know their visual acuity prior to such a bump. Military examinations record the visual acuity. Allied reports of ocular complications incident to war wounds (World War I) contain a surprisingly small number of cases of hole. A hole can be formed in a predisposed eye with or without a traumatic contribution.

DR. WALTER I. LILLIE, Philadelphia: This paper divides the traumas into the main divisions of cerebral concussion, contusions, lacerations, compressions, hemorrhages and skull fractures. The ophthalmologic manifestations are either sensory or motor disturbances. This may be in the form of oculomotor palsies, involving either the intraocular or the extraocular muscles, and fundal changes in a certain percentage of the cases. The importance of the pupillary changes during the early and late stages, especially noted in the group of compressions and hemorrhages and skull fractures, is stressed by the author. The use of a cycloplegic for a fundal examination masks the important pupillary reflexes which are variable during the course of the condition. If the pupil must be dilated, a mydriatic should be used which is fleeting in action and will not mask any change in the pupillary reflexes for any length of time. The fundal changes may vary from vascular manifestations in the form of arteriolar spasm with ischemia, venous congestion, edema of the disk and choking of the disk in the more severe cases. Skull fractures, in my experience, usually have normal ocular findings during the hospital stay, but this does not rule out the possibility of ocular damage at a later date, so the prognosis must be guarded. The syndromes of the intracranial pathologic changes are not unlike those produced by vascular, inflammatory and neoplastic lesions, although the localizing signs may be masked in the earlier stages of the convalescence.

DR. DONALD J. LYLE, Cincinnati: I wish to thank Drs. Ruedemann, Rutherford and Lillie for discussing the paper, for stressing certain phases of the subject presented, and for adding interesting material to it.

INTRAOCULAR FOREIGN BODIES

EDWARD STIEREN, M.D.
PITTSBURGH

In writing on this topic my object is to emphasize and reiterate that if prompt and proper methods are adopted many injured eyes will be saved and varying degrees of vision retained and to refute the defeatist attitude that an eye with a foreign body in its interior is potentially a lost eye.

My opinions are mainly personal and based on an experience of more than forty-five years in an industrial community. "What thou seest, write in a book" (Revelation, chapter I, verse 11).

There are several abstract principles to be considered first. The history of the accident is all important, for from it one learns whether one has to deal with a magnetic or a nonmagnetic retained foreign body. If the body is nonmagnetic, recovering it becomes more difficult and the prognosis is less favorable, as it entails additional trauma to a delicate and highly specialized organ already grievously injured.

Every patient with an ocular injury, either of the globe or the soft parts, should be given an immunizing dose of 1,500 units of tetanus antitoxin, not particularly for its specific action but as a foreign protein for the production of antibodies and the added resistance this will give to the ocular tissues.

Next in order is the determination of the location and the size of the intraocular foreign body. The wound of entrance can usually be detected if recent by direct examination; staining the eye with fluorescein or mercurochrome facilitates this. In small wounds that penetrate through the cornea, slit lamp examination will reveal the path of the foreign body and often the site of its lodgment.

If the media have remained clear the ophthalmoscope will often disclose the position of the foreign body if this is behind the lens; the object will appear fifteen to twenty times larger than it actually is, the dioptric system of the eye magnifying it this much.

If the foreign body cannot be seen, an x-ray localization must be made to determine not only the position but also the size. In borderline cases where it is possible that the piece of metal has penetrated the posterior sclera and lies within the orbit, the localization should be repeated, preferably by another roentgenologist. Any foreign body within the globe will cast a shadow when subjected to x-rays with the exception of optical glass, which contains little or no lead in its composition and is transparent to x-rays.

Should the particle be so small that a negative report is given, repeated plates of different densities should be made, and then one is usually able to determine its position.

With the exception of glass (which appears to be inert) all foreign bodies act as continuous irritants by processes which are partly electrolytic and partly oxidative, metals slowly going into solution in the intraocular fluids. Brass and copper are particularly toxic, and retention of iron or steel is followed by a deposit of iron throughout the eyeball (siderosis bulbi) accompanied by a chronic low grade inflammation of the uveal tract.

A case in point is that of a mill worker who had a minute piece of steel at the periphery of the lens. The eye was entirely quiet, accommodation was not disturbed and he had a perfectly functioning eye with normal vision. As he was above average intelligence the situation was explained to him, that to attempt removal of the foreign body might result in the formation of a cataract, extraction of which would result in aphakia. On the other hand there was a possibility of the foreign body becoming encapsulated and giving no further trouble. He elected the latter course and appeared for inspection at regular intervals for three years with the eye remaining the same. Moving to another city he was lost sight of for five years, and then he appeared with a painful eye, pronounced siderosis and secondary glaucoma, requiring enucleation. There had been no additional trauma. True he had enjoyed normal use of his eye for six or seven years, but the outcome points to the danger of leaving a metallic foreign body within the globe. Glass when retained becomes surrounded by foreign body giant cells and ultimately encysted in scar tissue. I have several cases of glass lying in the bottom of the vitreous chamber readily seen by the ophthalmoscope. One after twenty years has given no further trouble.

In removing sharp foreign bodies from the iris it is advisable to have the patient thoroughly relaxed under intravenous sodium pentothal or a general anesthetic. It can happen under local anesthesia that the patient squeezes against the speculum and the spicule disappears through the iris and zonula to lodge in the vitreous chamber.

When the foreign body lies in the lens the latter should be removed at the same time, with thorough washing out of the anterior chamber. It is all important to extract the lens nucleus even at the expense of a loss of vitreous. This is a better procedure than to postpone removal of lens matter to a future date (hoping for spontaneous absorption), as many eyes are sensitive to lens protein and the evils incident thereto. In addition it lessens the period of convalescence and returns the workman to work sooner.

If the cornea is lacerated and the iris prolapsed, the latter should be drawn out slightly and excised. The corneal wound should be brought together either by direct suturing or with a sliding conjunctival flap that takes in the circumference of the upper half of the cornea and is sutured into the lower fornix. I prefer the flap, as it does not further traumatize the globe and immediately closes the anterior chamber, allowing atropine to exert its effect.

If the wound of entrance involves the ciliary body, I do not try to save the eye but enucleate immediately. It is better to lose one eye than to risk total blindness from sympathetic ophthalmia. This course is recommended by Friedenwald:[1]

> In a certain number of cases (3-5 per cent) following perforating wounds of the anterior half of the eyeball there develops an intraocular inflammation which is characterized by its low grade but relentless course, by its resistance to all the usual forms of therapy, by the plasticity of the exudates which accompany it and, above all, by the fact that both eyes, the uninjured as well as the injured, become affected. Aside from its clinical histological appearance little is known about this disease except the fact that enucleation of the injured eye within two weeks of the injury precludes the development of the affection in the uninjured eye.

The number of eyes injured by magnetic in comparison with those by nonmagnetic foreign bodies will vary in different sections of the country. The magnetic

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1. Friedenwald, Jonas S.: The Pathology of the Eye, New York, Macmillan Company, 1929.

foreign bodies are much more numerous, fortunately, as in this class we have the indispensable aid of the electromagnet versus forceps manipulation and groping in the nonmagnetic group. In my experience about 10 per cent of the injuring materials have been nonmagnetic, and that they gave the poorest results is obvious.

A fairly large piece of copper or brass, coal or stone, wood or lead shot can be felt with a properly designed forceps (such as is made for me by Mueller) introduced closed into the vitreous. With the localization chart directing one's movements and an adequate scleral opening, the forceps is opened and the foreign body is grasped and removed. This may require several attempts and is not good for the integrity of the eye. In this connection it must be remembered that small shot as used in a shotgun are rarely made of lead now but of chilled steel and can be removed by the magnet.

If one fourth of the bulk of the vitreous escapes or if it is much disturbed by instrumental manipulations, the globe develops a minus tension and slowly deteriorates, ending in phthisis bulbi.

For this reason all the various shaped tips that come with a magnet except the cone or olive shaped ones should be discarded and not used in the vitreous. To remove small particles of ferrous metal from the anterior chamber I use the angular tip, which I have had ground down to the size of an iris repositer.

I discarded the use of the giant magnet many years ago because it is cumbersome, too strong and often more harmful to an injured eye than the original insult. Most of the damage to be feared by pulling the fragment forward around the lens is either damage that is unavoidable or damage that is due to the unskilful use of a powerful instrument.[2] In the practice of ophthalmology the value of the electromagnet does not depend entirely on its lifting power but depends more on the saturation of the field. The intensity of the magnetic field depends on the number of amperes multiplied by the number of turns of wire around the core. The smaller the wire, the greater the resistance. Thus the strength of the field is proportional to the number of amperes flowing through it, and since such a circuit follows Ohm's law for direct current, the strength of the field is also proportional to the applied voltage; i. e., doubling the voltage will double the field.

This rule holds accurately for field strengths below the "saturation point" of the iron core. Iron is capable of only limited magnetization, of the order of a few thousand gausses, this being termed the saturation point. The use of high voltage—and hence high amperage—in an electromagnet is limited by the magnet's power to dissipate heat. However, if used intermittently and for short periods a hand magnet is not likely to become overheated. Passing 220 volt direct current (available now in most hospitals and clinics for high voltage therapy) through the coil of a magnet up to 25 amperes resistance will about double the magnetic field.

Thus equipped the hand magnet has never failed me, nor is it necessary for the tip of the magnet to come in contact with the foreign body as some operators assert.

The magnetic field decreases proportionately to the size of the tip of the core, the small tips having much less magnetic power than the large one. It is therefore not necessary or wise to introduce a tip into the vitreous, as the large tip applied to the surgical incision will deliver more magnetism.

My consistent practice is to remove a magnetic foreign body through the cornea when it is anterior to the posterior lens capsule and through a scleral incision when it is in the vitreous, in the choroid or on the optic disk. The wound of entrance can seldom be used, and an incision needs to be made to facilitate removal of the artefact with the least degree of additional trauma. Removal should not be attempted until one knows positively where the object is located and its size. Many different problems will be encountered in removing by the anterior route, each of which the ingenuity of the operator must solve.

The fear of detachment of the retina following transscleral extraction is exaggerated. My procedure is to make a conjunctival flap and dissect an opening in the sclera down to the choroid. The knife does not enter the vitreous, and the incision is well above or below the conjunctival incision in order that the two incisions may not come together.

Knowing the size and location of the foreign body, I make the scleral incision large enough to allow the body (now attached to the magnet's tip) to be delivered without tugging. I find that a modified T incision with the vertical arm about half as long as the horizontal allows for an easier delivery. Before the conjunctival flap is sutured into place, and this is the most important step in the procedure, a cotton tipped applicator dipped in pure phenol (carbolic acid) is touched to the scleral incision. This acid acts as an irritant as well as an antiseptic, inducing local choroiditis, which causes adherence of the choroid to the sclera and the retina to the choroid and prevents postoperative separation of the retina. The incision can be ringed with diathermic puncture to achieve the same result, as advocated by others, but this takes time and time is of the essence. I have never observed the retina detach itself when my technic has been used.

I deplore the use of the magnet as a diagnostic instrument to determine whether ferrous metal is within the globe. A live magnet should never be brought to an eye. Only until the method of removal has been determined on and the size and the location of the foreign body are known should the magnet be used. Then the tip of the magnet is placed in the wound of exit and then only should the current be turned on.

Infections and inflammations of the uveal tract limited to the anterior segment of the eye must be combated by the operator's preferred methods. When the sulfonamide compounds first appeared I was encouraged by the immediate favorable result when they were administered internally; then, about the second day, improvement would halt. When penicillin becomes available, perhaps its action will be more reliable and sure against bacterial resistance. In combating infections I depend on systemic shock resulting from injections of foreign protein or intravenous injections of typhoid vaccine. Milk injected into the gluteal muscles is painful and may result in abscess formation. I have had good results from subcutaneous injections of proteolac, but if the reaction produces a body temperature of less than 101 F. I change to triple typhoid or typhoid H vaccine, as a temperature of 102 to 103 F. is desired.

Should a purulent infection of the vitreous ensue, the case is hopeless and the eye must be enucleated.

An evaluation of the end results in these cases depends on so many factors that reliable statistics are impossible. The structures involved in the injury, the

2. Lancaster, Walter B.: The Technic of Extraction of Intraocular Foreign Bodies, Am. J. Surg. 42:14 (Oct.) 1938.

time the foreign body has been retained, its composition and the additional trauma required to remove it are all deciding factors. My most favorable results have been obtained when the wound of entrance was through the sclera. It is remarkable how rarely in such cases the tissues are infected—perhaps the vitreous is a poor culture medium or its viscous structure is germ repellent. At any rate entrance of a foreign body through the cornea is much more liable to be followed by infection.

513 Grant Street.

ABSTRACT OF DISCUSSION

Dr. Elbert S. Sherman, Newark, N. J.: Faced with the problem of recovering an intraocular foreign body, no one can foretell the ultimate outcome. Factors favoring success are experience, good judgment, ingenuity and proper equipment. Fortunately the invading object is usually magnetizable. In about 10 per cent of Dr. Stieren's cases it was nonmagnetic. In this respect, his experience and mine coincide. Some will take exception to his practice of enucleating immediately every eye in which the wound of entrance involves the ciliary body. This seems unnecessarily radical. In at least 10 to 15 per cent of cases the ciliary body is involved and, as the lens is usually uninjured, the recovery with good vision is probable unless there is other serious damage. Often the passage of a small foreign body through the ciliary body causes but little reaction. Even though the resulting iridocyclitis is more or less severe, and if the eye is not blind, one should wait a week before enucleating. In the meantime active foreign protein therapy, in the form of intravenous typhoid vaccine and the removal of focal infection when present, will often give gratifying results. I have never had reason to regret this procedure and feel certain that many eyes have been saved that would have been needlessly sacrificed by a too hasty enucleation. I want to endorse Dr. Stieren's statement that the fear of detachment of the retina following transscleral extraction is exaggerated. If, as he advises, one does not permit a magnet tip or other instrument to enter the vitreous and applies some suitable cauterizing agent to the scleral incision to cause an adhesive choroiditis, detachment of the retina following the removal of recent foreign bodies will seldom occur, either immediately or later. In many magnet cases akinesia of the orbicularis is helpful, especially if there is likely to be any disturbance of the iris or loss of vitreous. It will prevent the squeezing referred to in the paper.

Dr. C. A. Veasey Sr., Spokane, Wash.: I employ tetanus antitoxin in all cases in which the possibility of tetanus is present. But in those cases in which the action of foreign protein alone was desired, typhoid vaccine was usually used. The location and size of the foreign body should be determined in every case. If this cannot be done by external examination —the use of the ophthalmoscope or slit lamp—it should be done by a proper x-ray examination. The suggestion that in cases in which the x-rays show the foreign body to be possibly in the sclera or just within or external to the eyeball the x-ray examination should be repeated, preferably by another roentgenologist, seems to me excellent. If the wound of entrance is through the ciliary body, or what Mr. Nettleship called "the danger zone" of the eye, it is my custom to recommend enucleation. A few have declined and escaped trouble, but it is dangerous and, like Dr. Stieren, I have always felt that it was better to lose the injured eye rather than to risk the grave possibility of sympathetic ophthalmia. Dr. Stieren and I are in agreement on the advisability of avoiding the use of the giant magnet and on the employment of the hand magnet after definite localization of the foreign body. I agree that the magnet should never be employed as a diagnostic instrument to determine whether or not a magnetic foreign body is present. It is damaging in many instances and does great harm to an eye which otherwise might have obtained useful vision if localization by x-ray had been employed first.

Dr. George H. Cross, Chester, Pa.: With the advancement of science, steel has been combined with many different substances, including tungsten, tantalum, molybdenum, columbium, cobalt matrix, chromium and nickel, that render it less magnetic, so that we have many more cases of nonmagnetic foreign bodies to remove. I must take exception to Dr. Stieren's use of the term "groping" in removing nonmagnetic foreign bodies. With the assistance of a good roentgenologist and using my method devised in 1926, it is possible to apply special forceps and remove the nonmagnetic foreign body from the eye with a minimum of trauma, even though the eye is filled with blood and no view of the interior is obtainable, and many times on the first attempt, thus saving eyes that previously were immediately enucleated. Dr. Stieren emphasizes the necessity of removing foreign bodies promptly from within the globe. Most surgeons feel, as he does, that an eye with a retained foreign body is always a dangerous eye even though the foreign body may be retained for many years. We all agree with Dr. Stieren in not inserting small magnets into the vitreous. An exception to the immediate removal of foreign bodies should be made in those cases in which the foreign body is located in the lens, where it remains intact, as we know there is less reaction to a foreign body here than in any other part of the globe. Sufficient time should be allowed to permit the traumatic cataract to become thoroughly opaque and more solid, keeping the eye under observation as to tension and reaction, and then do an intracapsular extraction by the Knapp method, with the Arruga or Kalt-Arruga forceps, removing the lens intact with the foreign body in it. Glass in the anterior chamber sometimes can be removed if the operator wears high power magnification, as a Bausch and Lomb or Zeiss loupe, and with sharp illumination it is possible to grasp the glass fragment with a fine pair of needle point forceps through a limbal incision.

Dr. Edward Stieren, Pittsburgh: Regarding Dr. Sherman's proper criticism of prompt enucleation when the ciliary region has been involved, we assume a tremendous responsibility. There is no way of estimating which of these cases might be followed by sympathetic ophthalmia. All operators who have had this happen to them must regret their conservatism, for there is nothing that can be done to restore vision in either eye once the disease has developed. I am grateful to Dr. Veasey for his concurrence in this belief. Few of us have the valuable aid of a trained fluoroscopist, as Dr. Cross has, to direct the movements of our forceps in removing vitreous nonmagnetic foreign bodies, but even so there must be more or less disturbance of the vitreous as he directs the forceps to be moved up or down, right or left. The more the vitreous is traumatized, the less the probability of saving a useful eye. When I advocate prompt removal of a traumatic cataract I have in mind a lacerated anterior capsule with cortical matter in the anterior chamber.

Mechanism of Gallstone Formation.—The formation of gallstones cannot be attributed to a single cause but must be referred to a number of pathologic conditions each of which may be due to one or more specific agents. Common observations indicate that one or more of three basic conditions always exist during the formation of biliary calculi, namely (1) stasis of the bile, (2) inflammation of the gallbladder or bile ducts and (3) abnormal metabolism involving the normal constituents of the bile. Of these conditions the first two contribute to the formation of gallstones either through an interference with the specific concentrating function of the gallbladder or through the production of a generally altered physical and chemical composition of the bile. The third condition, disordered metabolism, is important, as best we know, because of the resulting formation and excretion of excessive amounts of certain constituents of the bile. Inflammation of the biliary system and bile stasis are almost inseparable conditions and it is therefore impossible to determine their relative importance. Abnormal metabolism usually occurs independent of the other two conditions and therefore must act alone. It should be emphasized that the metabolic disorder referred to is a general process affecting the body as a whole and not a condition referable to the biliary tract; the essential factor in this connection is therefore not the function or structure of the gallbladder and the ducts but the composition of the bile as it is excreted by the liver.—Forbus, Wiley D.: Reaction to Injury, Baltimore, Williams and Wilkins Company, 1943.

INFRA-RED THERAPY OF FLASH KERATOCONJUNCTIVITIS

DAVID G. COGAN, M.D.
V. EVERETT KINSEY, PH.D.
AND
PHILIP DRINKER, CH.E.
BOSTON

Recent increase in "flash" keratoconjunctivitis from exposure to welding arcs has revived interest in methods of treatment for this condition. One of the methods currently receiving considerable attention is the use of infra-red radiation. It is reported that the ocular condition produced by exposure to electric flashes "can be cured by direct exposure of the eyes to infra-red rays."[1] There does not appear to be any rationale for this form of treatment, as the biologic effects of the ultraviolet rays which cause the keratoconjunctivitis are fundamentally different from those of the infra-red rays used in its treatment and there is no a priori reason that the one form of radiation would have a "neutralizing effect" on the other. Nevertheless, the importance of the subject at the present time and the wide attention which this form of treatment has received made it advisable to determine whether or not the aforementioned clinical report had an experimental corroboration.

To this end the following experimental procedures were used: After suitable radiation doses had been established, 10 rabbit eyes were exposed to an 85 watt mercury vapor arc with doses of ultraviolet radiation sufficiently above the threshold to cause a reproducible keratoconjunctivitis. After five hours, when the lesions first became apparent, alternate eyes were treated with a therapeutic heat lamp. The eyes were then examined and compared periodically until healed.

The mercury vapor lamp used in producing the lesions and the heat lamp used in its therapy were placed 15 cm. from the eye. A hole had been drilled in the glass casing of the mercury lamp to permit the passage of ultraviolet rays less than 3,100 angstroms. Prior to each exposure the rabbit's eye was anesthetized by one instillation of 1 per cent pontocaine and during the exposure the eyelids were held open by a speculum. The heat lamp was found to deliver 0.75 Gm. calory per square centimeter per minute at the distance used, as measured by a calibrated thermopile.

The pertinent data leading to the choice of suitable exposures and the results of treatment of experimental ultraviolet keratitis by infra-red radiation are collectively presented in the accompanying table. The ocular reaction is graded from 0 to + + + + according to the following criteria: ±, questionable abnormality; +, minimal mottling of surface and dilatation of blood vessel; + + mottling of the surface, dilatation of blood vessels, and abnormal staining of one half or less of the cornea by fluorescein; + + +, pronounced mottling of surface and dilatation of blood vessels with staining of more than one half of cornea; + + + +, same plus an opacity of the cornea. From part 1 of the table it is apparent that a three minute exposure to the mercury arc lamp under the conditions of the experiment provides a dose somewhat above the threshold, while from the latter portion of part 3 of the table it is apparent that the signs from this dose are reasonably reproducible. Thus, twenty hours after the exposure all the eyes which had been exposed for three minutes showed moderate mottling of the corneal surface, best seen with an illuminated Placido disk,[2] a mild dilatation of the conjunctival and ciliary blood vessels, and a take with fluorescein stain over some portions of the cornea. All corneas were healed in six days. The signs were similar in magnitude to those previously produced by exposing rabbit's eyes to welding arcs at a distance of 3½ feet for sixty seconds.[3]

Part 2 of the table indicates the ocular reaction with application of the heat lamp for various times. It is obvious that exposures of fifteen minutes or more under the conditions of the experiment consistently produce corneal lesions that are manifest in twenty hours. Exposure of five minutes, however, produced no visible damage. This latter time was therefore selected as providing an appropriate exposure for the experiments on infra-red therapy.

Results of Exposure to Mercury Vapor Arc and to Heat Lamp

	Time of Exposure to Mercury Vapor Arc, Minutes	Time of Exposure to Heat Lamp, Minutes	Reaction in 20 Hours
1. Effect of exposure to mercury vapor arc	1	..	0
	2	..	+
	3	..	++
	5½	..	+++
	8½	..	+++
	9	..	+++
2. Effect of exposure to heat lamp	..	5	0
	..	5	0
	..	15	++++
	..	15	++
	..	15	++++
	..	40	++++
3. Treatment of "flash" keratoconjunctivitis by heat lamp			
Treated	3	5	++
	3	5	++
	3	5	+
	3	5	+++
	3	5	++
Control	3	..	++
	3	..	++
	3	..	+
	3	..	++
	3	..	++

Part 3 of the table indicates the results of exposing 10 eyes for three minutes to the mercury arc with and without treatment by the heat lamp. No significant difference between the treated and untreated groups was found.

SUMMARY AND CONCLUSION

Keratoconjunctivitis was produced in rabbits by exposure to a mercury vapor arc. After the establishment of doses that would result in reproducible signs, alternate eyes were treated by means of a therapeutic heat lamp. No evidence was obtained to indicate that this form of treatment benefited the keratoconjunctivitis.

243 Charles Street.

From the Howe Laboratory of Ophthalmology, Harvard Medical School and the U. S. Maritime Commission.

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VALVULAR HEART DISEASE

PREVIOUSLY UNRECOGNIZED IN MILITARY MEDICAL EXAMINATIONS

CAPTAIN JOSEPH H. DELANEY
CAPTAIN SAMUEL I. MILLER
LIEUTENANT ROBERT W. KIMBRO
AND
MAJOR LOUIS F. BISHOP JR.
MEDICAL CORPS, ARMY OF THE UNITED STATES

The cardiovascular sections of the Medical Processing Unit and of the Station Hospital of the San Antonio Aviation Cadet Center, San Antonio, Texas, examined during a number of months approximately 45,000 men who were taking the Army 64 examination for flying. These examinees, between the ages of 18 and 27 years inclusive, were for the most part candidates for aircrew training. All of them had been subjected to at least one screening examination. In spite of this, 100 of them were found to have rheumatic valvular heart disease. Some had been examined routinely as many as twelve times in the course of their military service. Only 11 of this group knew of the presence of a heart murmur while in civilian life.

METHOD OF EXAMINATION

After experimenting with several methods, we found the following procedure to be the best suited to the careful examination of large numbers of men in a short time:

The medical history of the candidate was obtained, and his pulse rate, blood pressure and Schneider index were recorded prior to his entrance into the heart station. He was then interrogated regarding rheumatism, rhematic fever, growing pains, joint pains, arthritis, St. Vitus dance, scarlet fever, diphtheria, heart murmurs or heart disease. Following a brief general inspection he was instructed to exhale deeply and to lean forward about 20 degrees. Auscultation was then performed with the diaphragm type (Bowles) stethoscope, with particular attention to the aortic area and to the left sternal border. The examiner listened long enough to assure himself of the presence or the absence of significant murmurs. The examinee then exerted himself by briskly executing eight or ten deep knee bending exercises and was immediately examined in the left lateral recumbent position with special attention to the mitral area. The bell type of stethoscope proved to be most effective for this part of the examination. The candidate was first examined by a student officer from the School of Aviation Medicine and then by the staff cardiologist. The average time of each examination was two minutes.

Every examinee with a history of rheumatic disease, heart murmur or heart disease was examined by means of the fluoroscope, studied electrocardiographically and reexamined clinically.

Routine x-ray examinations were made of the chests of all candidates to rule out pulmonary disease. If the heart shadow appeared abnormal on the film, the candidate was recalled for further clinical examination and fluoroscopic study.

Each candidate with a questionable or a definite organic murmur was further studied fluoroscopically, electrocardiographically and often with the use of the teleoroentgenograph. Each was then reexamined clinically at greater leisure. A pulmonic systolic murmur was not considered evidence of valvular disease unless very loud or accompanied by a thrill. Any cardiac murmur occurring during diastole was considered evidence of organic valvular disease.

Finally, all candidates with questionable, as well as definite, valvular heart disease were sent to the Station Hospital for close observation, complete evaluation and final disposition. Many of these were subsequently transferred to the School of Aviation Medicine at Randolph Field, where they were independently studied and used as teaching material. Every diagnosis was corroborated by the four of us and in many instances by other observers. Each examinee was under close observation for a period of not less than three weeks from the time his medical examination was begun at the Medical Processing Unit until his case was reviewed by the disposition board at the Station Hospital. This study and observation permitted the exclusion of transient murmurs and bruits of extracardiac origin.

Such a plan of study as this is indicated because a carefully considered decision must be made within a relatively short time, without the benefit of examination for progress over a period of several months.

From the Medical Processing Unit and the Station Hospital, San Antonio Aviation Cadet Center, San Antonio, Texas.

VALVULAR DISEASE ENCOUNTERED

Table 1 shows the types of valvular involvement encountered and their distribution among these 100 men.

The figures in table 1 are not in agreement with those usually quoted as representative of the total population with rheumatic heart disease.[1] The mitral valve was involved in 57 per cent in our series, compared with the usually reported 95 per cent.[2] The aortic valve alone was involved in 43 per cent of our series, in contrast with the 5 per cent usually seen.[2] Moreover, the number of patients with involvement of more than one valve in the present series is small in comparison with the numbers in other series. This probably pictures the minimal nature of the lesions encountered in this selected group. The preponderance of aortic insufficiency in proportion to its reported occurrence in other series of rheumatic valvular heart disease would indicate that this is the lesion which is most frequently overlooked.

HISTORY

A history of rheumatic fever or of chorea was obtained from only 30 of the 100 men with valvular disease; a history of growing pains and frequent unexplained epistaxis, from each of 2, and a history of scarlet fever with cardiac damage occurring at the same time, from 1. In all, 35 patients on careful questioning admitted some manifestation of rheumatism. Often the history was concealed at first by the applicant and was elicited only after the candidate knew that he had been eliminated from military training because of the clinical findings and that there was no advantage in further concealment. Usually a history of some manifestation of rheumatic fever can be obtained from over 70 per cent of patients with rheumatic heart disease.[3] While it is well known that bouts of rheumatism are often forgotten, the small number of histories obtained would tend to show that the rheumatic infection was mild or atypical and hence unrecognized or more easily forgotten. Multiple attacks of rheumatic fever had occurred in only 2 men. Two others had experienced both chorea and rheumatic fever. Only 3 patients had had chorea, confirming the fact that this is an uncommon disease in males.

1. Lewis, Thomas: Diseases of the Heart, ed. 2, New York, Macmillan Company, 1937, p. 203.
2. White, Paul D.: Heart Disease, ed. 2, New York, Macmillan Company, 1937, p. 238.
3. White: Heart Disease, p. 232.

CARDIAC HYPERTROPHY

All candidates with rheumatic histories and questionable or definite murmurs were examined fluoroscopically. Many of them also had teleoroentgenograms from which the Ungerleider index was computed. By these examinations the degree of cardiac hypertrophy was estimated.

TABLE 1.—*Valvular Involvement*

Aortic valvular disease alone		42
Aortic insufficiency alone	29	
Aortic stenosis alone	9	
Aortic stenosis and insufficiency	4	
Mitral valvular disease alone		48
Mitral stenosis alone	4	
Mitral insufficiency alone	10	
Mitral stenosis and insufficiency	34	
Combined aortic and mitral valvular disease		9
Aortic insufficiency with mitral stenosis and insufficiency	5	
Aortic insufficiency and stenosis with mitral stenosis and insufficiency	1	
Aortic insufficiency and mitral insufficiency	3	
Tricuspid or pulmonic valvular heart disease		0
Total		100

The incidence of cardiac hypertrophy in this series of patients with valvular disease is shown in table 2.

In only 2 instances did the Ungerleider index exceed plus 20 per cent. Cardiofluoroscopy yielded more helpful information than did evaluation of the heart size by the use of the Ungerleider index for the following reasons: 1. Fluoroscopy often showed enlargement of individual chambers of the heart when the Ungerleider index was within normal limits. This was particularly true as to men with mitral stenosis. 2. The Ungerleider index was often larger than plus 10 per cent when no other evidence of heart disease could be found. This was especially true as to men with slight deformities of the thoracic wall and as to those of strikingly sthenic build.

It is of interest that there were 8 examinees with aortic insufficiency without cardiac hypertrophy whose last known attack of rheumatic fever occurred eight, ten, twelve, twelve, fourteen, fifteen, sixteen and sixteen years prior to this examination. Since it may be assumed that the valvulitis occurred at or before that time, it would follow that minimal degrees of aortic insufficiency may be borne for a number of years without cardiac hypertrophy. Indeed it would seem that as no peripheral signs of aortic insufficiency were present in this group there are a number of persons with minimal aortic valvular lesions which are either stabilized or very slowly progressive in the absence of repeated rheumatic infection. Follow-up examinations of these persons over a long period would be of great interest and importance.

ELECTROCARDIOGRAPHIC FINDINGS

The electrocardiograph proved to be the least valuable diagnostic instrument used in the study of these candidates. Although electrocardiograms were routinely made on every man who gave a history of rheumatism, even in the absence of physical signs of heart disease, no abnormalities were encountered. As a case finding method its value is negligible. In the 100 cases of valvular heart disease with physical signs only 10 abnormal tracings were encountered, and these were found only in cases of involvement of the mitral valve. First degree auriculoventricular block was encountered five times, bundle branch block once and tall, notched P waves four times.

AUSCULTATORY FINDINGS

In the final analysis accurate auscultation proved to be the only reliable means of discovering valvular heart disease in this group. The aortic diastolic murmurs were for the most part of high pitch, of low intensity and of long duration, often heard only in the third and fourth interspaces along the left sternal border. In these cases of mitral stenosis the middiastolic rumble was not commonly encountered. The characteristic murmur was the rough presystolic crescendo ending in a loud sharp first tone. Often it was elicited only after considerable exercise on the part of the subject. The importance of listening carefully for this murmur in the presence of a loud first tone at the apex cannot be overestimated. Auscultation over a wide area is necessary for the murmur is sometimes localized over a space no larger than a quarter (24 mm.). Differentiation of the presystolic murmur from the split or impure first sound heard at the cardiac apex in a thin chested person with an overactive heart is often a problem. One should recognize the type of person in whom the latter is usually found. The other important things are (1) the duration of the murmur (the presystolic is always longer); (2) the crescendo sound of the presystolic murmur (in the impure first tone the loudest part may be heard first); (3) the fact that every presystolic murmur can be heard in its classic form at some time and that often repeated examinations are necessary; (4) the fact that the characteristic loud, sharp snapping first tone always follows a presystolic murmur. An accentuated or reduplicated pulmonic second tone should always be an indication for careful reexamination of the mitral area.

TABLE 2.—*Cardiac Hypertrophy*

Type of Disease	Enlarged Heart	Normal-Sized Heart
Aortic insufficiency alone	10	29
Aortic insufficiency and stenosis	3	1
Mitral insufficiency alone	0	10*
Mitral stenosis alone	0	4†
Aortic insufficiency and mitral stenosis and insufficiency	4	2‡
Mitral stenosis and insufficiency	11	23
Aortic insufficiency and mitral insufficiency	0	3‖
Total	28	72

* In 3 patients the Ungerleider index was plus 15, 13 and 10. The fluoroscopic findings were normal.
† In 2 patients the Ungerleider index was plus 15 and 10, but fluoroscopy gave normal results.
‡ In 1 patient the Ungerleider index was plus 12. The fluoroscopic findings were normal.
‖ In 1 patient the Ungerleider index was plus 12. The fluoroscopic findings were normal.

The most difficult problem was the evaluation of the systolic murmur. We attempted to grade these murmurs according to the classification of Levine.[4] Since

4. Levine, Samuel: Clinical Heart Disease, Philadelphia, W. B. Saunders Company, 1940, p. 273.

it is impossible for us to follow our examinees over a long period of time, the diagnosis of organic mitral insufficiency was made on the basis of auscultatory signs alone only when the murmur was of grade 3 intensity or louder. With the grade 2 systolic murmur either a definite history of rheumatic infection or some other sign of heart disease had to be present before the diagnosis of organic valvular disease was made. The fact that in many instances a murmur heard at the apex is transmitted from a loud pulmonary systolic murmur soon became evident to us. In these instances the murmur heard at the apex has the same quality and pitch as that identified at the pulmonic area. It can be traced from the point of origin to the cardiac apex, is heard only during complete expiration and usually disappears when a small amount of air has been taken into the chest. A number of men with this type of murmur were studied fluoroscopically and electrocardiographically, and no evidence of heart disease could be found.

OTHER SIGNS AND SYMPTOMS OF HEART DISEASE

Other signs of heart disease were infrequent in this group. Sometimes the apex impulse could be found displaced to the left. Occasionally the typical mitral facies was encountered. Cardiac thrills were distinctly uncommon, although looked for in all patients. None of the signs of congestive failure were present in the entire group. Clubbed fingers proved in every instance to be a misleading sign. At least 10 examples of this interesting abnormality were encountered. Complete studies in these cases failed to reveal evidence of cardiac or pulmonary disease and led to the conclusion that the condition probably was of congenital origin.

The absence of peripheral signs in most of our cases of aortic insufficiency was striking. A capillary pulse was found only three times, and the other classic peripheral signs of aortic insufficency were absent. The highest systolic blood pressure encountered in this group was 178 mm. of mercury, and the lowest diastolic pressure was 55 mm. of mercury.

Symptoms of heart disease were conspicuous by their absence. One man alone in the entire group with valvular disease complained of symptoms referable to the heart, and these symptoms were easy fatigability and palpitation on exertion and at rest. He was judged also to have neurocirculatory asthenia. The absence of symptoms in the other 99 men in the group was striking and in sharp contrast with the plethora of symptoms encountered in the group with neurocirculatory asthenia. The fact that practically all were active in sports is not surprising. The literature contains numerous references to athletic feats performed by persons with valvular heart disease.[5]

COMMENT

The presence of a sizable number of men with unrecognized minimal heart disease in a group which had previously been subjected to fairly careful examination seems to us to be an important observation. Cole[6] reported the incidence of heart disease in college students, who at least partially resemble this group, as 15 per thousand. He gave no figures as to the percentage in whom heart disease was previously unrecognized. Judging from the occurrence of 2 per thousand in one group there must be a large number of young people with unrecognized minimal valvular disease in the general population. The importance of early recognition of this group from the military point of view is obvious. Despite their good cardiac reserve and absence of symptoms they are under a handicap when forced to extreme physical exertion. They are susceptible to recurrent bouts of rheumatic fever which may make them cardiac cripples prematurely. The danger of subacute bacterial endocarditis always threatens. There is always the possibility that they may become a government charge when and if some one discovers later in their military career that they have heart disease.

The group is also important from the industrial, insurance and public health points of view. The fact that large numbers of physicians do not recognize that such lesions exist is evident. Many physicians are accustomed to think of aortic insufficiency as occurring only in the presence of great enlargement of the heart, a loud diastolic murmur, low diastolic blood pressure and classic peripheral signs. That mitral stenosis occurs in the absence of dyspnea on exertion, a loud, easily audible murmur and a large left auricle is often not appreciated. True enough the unrecognized patients do not consult the doctor because of symptoms of heart disease, but they do go to physicians for other reasons. Careful and attentive auscultation even in the absence of a history of rheumatism will yield fruitful results in the discovery of minimal valvular heart disease.

Once the diagnosis is made, the management must be skilful. It is unfair to make these young men heart conscious. They must be tactfully guided into occupations in which their livelihood is not dependent on their physical endurance. They should be guarded from undue exposure to the weather, and they should not engage in strenuous competitive sports. At the same time the physician must not alarm them unduly. It is all too easy to make cardiac invalids out of them. They should be carefully followed in order that further knowledge may be gained as to the prognosis and ultimate outcome of these minimal lesions.

SUMMARY AND CONCLUSIONS

In the examination of a large number of men aged 18 to 27 inclusive, approximately 2 per thousand were found to have hitherto unrecognized valvular heart disease despite the fact that they had all been subjected to two or more physical examinations. The condition most frequently unrecognized was aortic insufficiency. In almost every case the valvular disease was minimal and was associated with minimal cardiac hypertrophy or none.

The fact that only 35 per cent gave a history of any manifestation of rheumatism is in contrast with the fact that in most series the usual figure is 70 per cent or over.

Careful auscultation is the only reliable means of detecting this type of heart disease.

The discovery of such unrecognized heart disease is important from both military and civilian standpoints; hence there should be more careful cardiac examinations.

5. Jokl, Ernst, and Suzman, M. M.: Aortic Regurgitation and Mitral Stenosis in Marathon Runner, with Special Reference to Effects of Valvular Heart Disease on Physical Efficiency, J. A. M. A. 114:461 (Feb. 10) 1940.

6. Cole, Llewellyn R.: Cardiac Disease Among 29,189 Newly Entering Students at the University of Wisconsin, Am. J. M. Sc. 201:197 (Feb.) 1941.

GRAIN ITCH

GEORGE K. ROGERS, M.D.
PHOENIX, ARIZ.

In spite of the fact that Pediculoides ventricosus is an apparently widespread habitant of the United States, a review of the literature reveals but little concerning this obnoxious mite. In fact, aside from a report [1] of several cases in 1933, a report on harvest itch in Europe [2] and Grove's [3] study on hypersensitivity to P. ventricosus, it was necessary to go back to 1909-1910, when original investigation was done to find case reports in American medical literature. Therefore most accounts, including treatment and prophylaxis found in the modern textbook, are taken from these original articles.

The disease seems to be fairly common in certain farming districts of the United States, but since it responds rapidly to simple remedies it would appear that many cases are never diagnosed, the cause being attributed to some form of allergy or to mosquito or other insect bites. The epidemic reported in this paper was originally attributed to allergy, and considerable work was done along these lines before the causal agent was discovered.

SYNONYMS

Among the terms used in describing this condition are grain itch, acarodermatitis urticarioides, barley itch, grain mite dermatitis, straw itch, mattress itch and hay itch.

SYMPTOMS

The onset of symptoms after exposure varies from twenty minutes [4] to twenty-four hours; [5] Schamberg [6] records sixteen hours as the normal time.

It is thought that Pediculoides in the process of abstracting liquid substance from the skin synchronously injects an irritating substance which gives rise to an urticarial type of lesion. These lesions, which may be situated anywhere on the body, are extremely itchy, are pale pink to bright red and vary in size from pinhead to 2 or more inches in diameter. Many lesions are surmounted by a tiny vesicle but no puncture wound is visible. Secondary infection is common as a result of scratching, and pyoderma and impetiginous lesions may occur resulting in enlargement of the neighboring lymph nodes.

Goldberger and Schamberg [7] report a moderate leukocytosis and eosinophilia with occasional albuminuria occurring in many cases which they studied.

Slight malaise is present only when the lesions are very extensive or when decided secondary infection occurs, and persons who have been in frequent contact with the mites, such as farmers, frequently have few or no symptoms, having apparently become desensitized to the obnoxious material.

ETIOLOGY

The disorder is produced by a mite first discovered by Mr. George Newport of England in 1849 and known as Pediculosus ventricosus. In 1872 Santé reported an epidemic "in which a microscopic insect analogous to the acarus of scabies caused an itch." [8] Prior to this time outbreaks of an itching eruption in people sleeping on straw mattresses were observed in Massachusetts in 1829, 1831 and 1845. In France in 1849 similar eruptions were noticed in laborers who handled the straw of wheat and barley. These epidemics were probably due to Pediculoides, and while this mite was first identified entomologically in the United States by Webster [9] in 1882 it was not until May 14, 1909 that Dr. Lyman T. Rawles [10] proved conclusively that Pediculoides ventricosus was the cause of grain itch. Almost simultaneously Schamberg and Goldberger,[7] reporting on an epidemic of the eruption occurring in and around Philadelphia, demonstrated conclusively the causation of the eruption.

It is interesting to note that in 1902 the mite (which is a parasite of the boll weevil) was brought from Mexico to Texas by Hunter [8] for the purpose of destroying the boll weevil. This experiment was not a success, as the mite was destroyed by a small ant which acted as a natural check.

In 1923 Ancona [11] reported a peculiar form of asthma occurring among workers in grain mills in Florence, Italy, which he attributed to the inhalation of the mite or to its action on the nasal mucosa. In 1925 Storm van Leeuwen [12] regarded this condition as being due to the action of the mite in biting the skin, providing the sensitization necessary for the asthmatic symptoms to result from subsequent contact or inhalation.

The female, which is the larger, measures 0.2 mm. in length, and under favorable conditions only six days elapse from the time the young female emerges from the mother before they reproduce a brood of their own. The brood varies in number from a few dozen to over 200. Pediculoides lives as an ectoparasite on various insects especially in their larval stages. Probably the most common of these is the grain moth (the adult of which is a small gray moth not unlike a cloth moth, and its larvae feed on the grain of cereals) and the abundance of the mites varies in direct proportion to the number of insects present.

At winter temperatures but little development takes place, the mites appearing over winter as gravid females.

The microscopic examination of the cutaneous lesion as described by Schamberg [6] demonstrates the fact that the mite does not burrow into the skin as does the acarus of scabies and that the pathologic changes in the skin are characteristic of urticaria. There is a circumscribed elevation of the epidermis with thinning of the horny layers and absence of the stratum granulosum with the rete cells showing some alteration. The papillary zone is infiltrated with round cells, polymorphonuclear leukocytes and mast cells. There is considerable dilatation of the blood vessels and lymph spaces. No trace of a puncture can be discerned.

From the Lois Grunow Memorial Clinic.

1. Kittredge, H. E.: Grain Itch: Report of 2 Cases Occurring in Small Epidemic, Virginia M. Monthly **60**:357-360 (Sept.) 1933.
2. von Mallinckrodt-Haupt, A.: Harvest Itch in Europe, Urol. & Cutan. Rev. **24**:744-748 (Nov.) 1920.
3. Grove, E. F.: Studies in Specific Hypersensitiveness; Asthma and Dermatitis Due to Hypersensitiveness to Pediculoides Ventricosus, J. Immunol. **11**:263-271 (Oct.) 1926.
4. Swan, D. C.: Dermatitis Caused by Mite (Pediculoides Ventricosus) and Its Occurrence in Australia, M. J. Australia **2**:573-578 (Nov. 3) 1934.
5. Sutton, R. L., and Sutton, R. L., Jr.: Diseases of the Skin, ed. 10, St. Louis, C. V. Mosby Company, 1939, pp. 1345-1348.
6. Schamberg, J. F.: Grain Itch (Acarodermatitis Urticarioides): A Study of a New Disease in This Country, J. Cutan. Dis. **28**:67 (Feb.) 1910.
7. Goldberger, Joseph, and Schamberg, J. F.: Epidemic of an Urticarioid Dermatitis Due to a Small Mite (Pediculoides Ventricosus) in the Straw of Mattresses, Pub. Health Rep. **24**:973-975 (July 9) 1909.
8. Quoted in Schamberg.[6]
9. Webster, F. M., and Reeves, G. I.: Wheat Straw Worm, Circular 106, U. S. Dept. of Agriculture, 1909.
10. Rawles, L. T.: Straw Itch, Indiana M. J. **27**:337, 1909; Dermatitis Pediculoides Ventricosus; Synonym, Grain Itch, ibid. **27**:351-354, 1910.
11. Ancona, G.: Asma epidemico da pediculoides ventricosus, Policlinico (medical section) **30**:45-70 (Feb.) 1923.
12. Storm van Leeuwen, W.: Allergic Diseases, Philadelphia, J. B. Lippincott Company, 1925, p. 24.

DIFFERENTIAL DIAGNOSIS

The disease must be differentiated from urticaria, scabies, pediculosis, chickenpox and erythema multiforme. A history of previous contact with straw, the occurrence of the eruption in families or groups of laborers and the urticarial type of reaction surmounted by the vesicle are positive aids in the diagnosis of grain itch.

In urticaria the lesions are evanescent in character, different stages of the lesions are seen and the eruption is frequently preceded by constitutional symptoms.

Scabies with its characteristic distribution is positively identified with the findings of the acarus by microscopic examination.

The lesions of Pediculosis corporis are usually limited to the trunk, and the hemorrhagic puncta found on the scapular region and around the waist are characteristic. By searching the seams of the undergarments the pediculi are usually found.

Chickenpox is seen more commonly in children. The eruption appears in successive crops and usually develops without apparent preceding erythema.

Absence of the history of external injury aids in the diagnosis of erythema multiforme, which is characterized by purplish red macules, papules or nodules, is symmetrical in its distribution and often assumes characteristic shapes. The absence of itching and the appearance of new lesions when the patient is removed from his work are of diagnostic value.

Some cases of dermatitis medicamentosa may resemble grain itch, so a history of taking drugs is most important.

TREATMENT

While Pediculoides cannot thrive on human blood, nevertheless, when its normal food supply is cut off it will feed on any flesh; hence it remains attached to the human skin for only a short time and so treatment with the view of destroying the mite is useless. Thus remedies for relieving the subjective symptoms are all that are necessary. This may be accomplished by the use of warm demulcent baths such as oatmeal, or linit starch and mild antipruritic lotions as phenol 15 minims (1 cc.), zinc oxide 1 ounce (30 Gm.), glycerin 1 drachm (4 cc.), lime water 4 drachms (15 cc.) and rose water to 4 ounces (120 cc.).

Concern should be given to the prevention of the disease, and with this end in view cooperation of the farmer and state entomologist is necessary. Burning the grain stubble during the fall or spring has been suggested,[12] the control of the insect on which the mite feeds being essential.

Cory [14] states that the mite can be got rid of by dusting the buildings, granaries and other material that comes in contact with grain and straw with powdered sulfur.

REPORT OF CASES

In the fall of 1941 it was found that men handling bales of hay at the Tovrea Packing Company, Phoenix, Ariz., were breaking out in a cutaneous eruption anywhere from eight to twenty-four hours after being in contact with the hay, which had been brought in from different parts of the state. A form of allergy was suspected and samples of the hay were sent to the Department of Bacteriology of the University of Arizona in Tucson, where allergens were made. These were sent to the packing company with instructions to have the men tested for sensitivity. For some reason this was not done, and since the supply of hay was almost exhausted no further action was taken.

In November 1942 a case of cutaneous eruption was referred to me from this company. The patient was a laborer aged 50 whose job was to open bales of hay and to load it into trucks prior to the hay being ground up for feed. He presented a generalized urticarial type of eruption which was extremely itchy and which had developed a day after he began working on the hay pile. The individual lesions were discrete and papular, with many showing the characteristic wheal formation of urticaria. They differed from urticaria, however, in that those which were not excoriated were surmounted by a tiny central vesicle varying from pinpoint to pinhead size and filled with a clear fluid. Secondary infection was present in numerous areas, especially about his groins and axillas, where pyoderma-like lesions had developed. No examination for parasites was made. Linit starch baths and the aforementioned antipruritic lotion were prescribed, applications of which gave rapid relief, the patient finding it not necessary to return for further investigation.

In February 1943 a call was received from the manager of the same company with the information that a fresh outbreak of the eruption had occurred and that the men refused to work on the hay which had been received the previous fall. Several men were examined, all of whom presented a similar picture to the case seen in November.

Insect bites were suspected and samples of hay were collected from both the outside and the inside of the bales, and at this time it was noticed that there were many grain moths and other insects infesting the stacked up hay. An interesting fact was that the foreman who had worked on the job for years was the one man who did not complain of any irritation in spite of the fact that he was in constant contact with the hay.

Microscopic examination of the samples of hay and straw revealed the cause of the epidemic, Pediculoides ventricosus, which was found to be present in considerable numbers in all specimens collected. Most of the men responded to the same treatment as already mentioned, while a few received considerable relief from itching by rubbing themselves with alcohol.

Preventive measures were then tried in an effort to get the men back to work. Greasing of the body followed by change of clothing, as suggested by Goldberger [7] and by Chandler [13] was ineffective and troublesome, as was the method of dipping the underclothing in a mixture of sulfur, naphtha soap and alcohol and allowing it to dry before wearing. However, the full cooperation of the men using these methods was difficult.

Sublimed sulfur dusted on the skin and underclothing as suggested by Riley and Johannsen [15] was tried and proved effective for several days, when the men again began to break out. About this time the supply of hay ran out and no further trouble has been reported. It was learned afterward that five of the men on their own initiative sprayed themselves with Shell Oil Fly spray and claimed immunity from the bites of the mite. This product of the Shell Oil Company, Inc., consists of a pyrethrum extract (the irritating properties having

13. Chandler, A. C.: Animal Parasites and Human Disease, New York, John Wiley & Sons, 1918, pp. 337-339.
14. Cory, E. N.: Grain Itch Mite or the Louse Mite (Pediculoides Ventricosus), University of Maryland and U. S. Department of Agriculture, Cooperating Extension Service, Release of August 1942.

15. Riley and Johannsen, quoted in Chandler.[13]

been removed) and an odorless, highly refined kerosene. Since kerosene is irritating to the skin, this method is not to be recommended.

CONCLUSION

Apparently the diagnosis of grain itch is frequently missed, owing to the ease with which the symptoms subside after removal of the patient from the infected material.

Preventive measures consist in enlisting the aid of both the farmer and the state entomologist.

RECURRENT DISLOCATION OF THE SHOULDER

PAUL B. MAGNUSON, M.D.
AND
JAMES K. STACK, M.D.
CHICAGO

When one finds described in the literature many operations for the correction of a mechanical fault it is a fair assumption that none of them are entirely satisfactory in establishing permanent cure. Certainly recurrent dislocation of the shoulder is not an infrequent condition, but its cause has certainly never been established satisfactorily.

Analyzing the condition from the anatomic standpoint, it seems to us that the glenoid has little or no function in maintaining the head of the humerus in position. It is almost flat and should be smooth; if it is not smooth, the patient's use of the shoulder is so hampered that recurrent dislocation could not take place. The capsule of the joint is a weak and loose bag which is attached well above and well below the actual articular surface and has little part in holding the head of the humerus in contact with the surface of the glenoid. In circumflex paralysis the head of the humerus will drop away from the scapular attachments a full inch, and the weight of the arm will continually stretch the capsule until the head of the humerus lies practically under the glenoid.

If these two anatomic structures do not support the head of the humerus, how are we to assume that it is maintained in its position against the articular surface of the glenoid? It is quite apparent that the muscles of the shoulder and arm originating at the shoulder girdle and inserting in the humerus or below are responsible for maintaining this position. It has been fairly well established through the experience of many men that the head of the humerus is dislocated primarily when the arm is abducted to 60 to 90 degrees, extended back of the lateral midplane of the body and internally rotated, with the force applied to impel the head of the humerus downward and forward. In this position the great adductors of the humerus attached to the upper third of the shaft anteriorly are pulled tight. The pectoral muscle of this group, attached to the anterior lip of the bicipital groove and very close to the head of the humerus, pulls the head downward and forward, and this is a powerful muscle. The latissimus dorsi and teres major pull downward more than forward, especially with the arm in internal rotation. What is there to oppose these muscles and keep the head of the humerus from dislocating downward and forward? When the arm is in the abducted extended position, especially in internal rotation, the head of the humerus is thrown forward against the anterior part of the capsule. It is held backward by the external rotators and abductors, namely the supraspinatus, infraspinatus and teres minor, which come together laterally and somewhat forward to attach to the greater tuberosity, not passing through or forming part of the capsule of the joint. On the other hand, the subscapularis comes beneath the head of the humerus and winds around anteriorly to attach to the lesser tuberosity over the anterior surface of the head of the humerus (fig. 1). This is an internal rotator, and with the arm in abduction and extension and internal rotation this muscle is relaxed. Normally the subscapularis attachment blends with the anterior part of the capsule of the joint and forms a broad heavy ligamentous support around the upper end of the head of the humerus. When this support is pulled tight it is adequate to hold the head of the humerus against the pull of the pectoral and adductor muscles if it is broad and strong. If, however, it is narrow or weak, when the arm is in the abducted extended position the attachment of the muscle has a tendency to slip up between the head of the humerus and the glenoid, or between the head of the humerus and the coracoid (fig. 2).

The supraspinatus, infraspinatus and teres minor, of course, do exert some effect in holding the head of the humerus back in the glenoid. It is not infrequent to

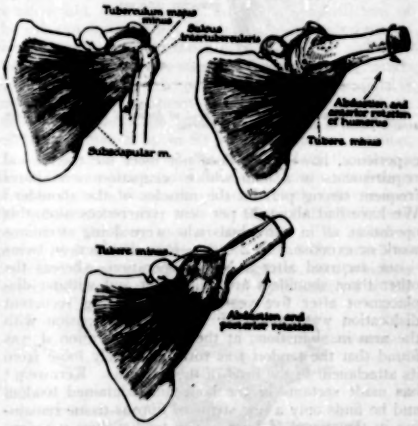

Fig. 1.—Attachment of subscapularis to lesser tuberosity of humerus.

see the attachment of these muscles pulled off with a shell of the greater tuberosity in a forcible dislocation of the head of the humerus downward and forward. Unless these muscles are attached at their proper site external rotation cannot be maintained and therefore the subscapularis cannot support the head of the humerus normally but permits internal rotation, which relieves the tension on the part of the capsule supported normally by the subscapularis.

All these muscles working in harmony as a group would seem to be the main support of the head of the bone in resisting the pull of the pectoralis major and the other adductors as well as the force of any blow or torsion which might dislocate the head of the humerus. This being true, it follows that these muscles must be properly attached and must work in harmony in order to maintain the head of the humerus in its normal position under circumstances of stress, when the arm is in the abducted extended position.

The Nicola operation [1] contemplates overcoming the tendency of the humeral head to displace, by inserting through it what is essentially a ligamentum teres. For this the long head of the biceps is used, and in many cases it serves to cure recurrent dislocation. In my

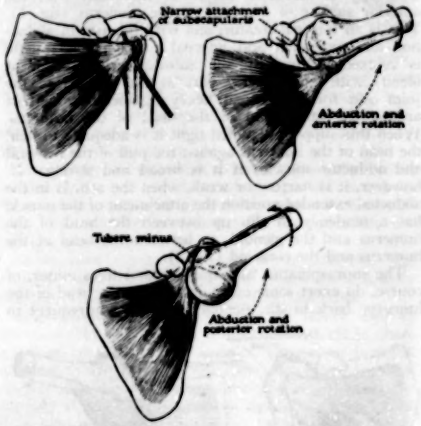

Fig. 2.—Tendon slipping between head of humerus and coracoid when arm is placed in abduction and extension.

experience, however, it does not meet the mechanical requirements in a man whose occupation necessitates frequent strong pull on the muscles of the shoulder.[2] We have had about 20 per cent recurrences after this operation, all in individuals who were doing strenuous work or exercise. In 2 cases—four shoulders in twins—one recurred after a Nicola operation, whereas the other three shoulders are still intact and without displacement after five years. The recurring recurrent dislocation was caused by forcible hypertension with the arm in abduction; at the second operation it was found that the tendon was torn completely loose from its attachment in the head of the humerus. Kernwein [3] has made sections of the bone and contained tendon, and he finds only a few strips of fibrous tissue remaining in the tunnel of bone. The tendon does not keep its character as a tendon where it passes through bone. He has repeated this experiment on animals and finds that there remains only an attachment of tendon on the surface of the bone after a few months.

Bankart [4] believes that recurrent dislocation is due to the capsule being torn from the glenoid, which leaves a gap for the head to descend without resistance. Undoubtedly this is true in some cases, but in the recurrent dislocations on which we have operated, amounting to 21, we have not found this condition, although the capsule has been opened anteriorly to permit inspection of the glenoid lip. Also with the capsule as loose as it normally is I cannot see that it adds very much support to the head of the humerus or control of its tendency to displace downward and forward when strong pull is exerted by the pectoralis major and other adductor muscles.

McLaughlin [5] says "Operative findings on both acute single and chronic habitual lesions of this type have proved pretty definitely that soft part tears accompanying dislocations are many and varied, both as to location and extent. It is our present impression that the pathologic circumstances predisposing to habitual dislocation consist of certain combinations of the soft part lesions, but we are not yet sure just which combination does the trick. It appears reasonably certain that a longitudinal tear through the aponeurosis joining the supraspinatus and the subscapularis, occasionally involving the subscapularis itself, but in any case allowing the latter tendon to recede forward and downward away from the external rotators, constitutes one digit in the correct formula of soft part lesions leading to recurrent dislocation."

With this we are in full agreement, because it is only reasonable to conclude that any relaxation in the attachment or extension of the muscles from the scapula to the head of the humerus interferes with the strength and resistance of these muscles to the displacing effect of the pectoralis major and the hyperextending force on the humerus, which resists the forward displacement of the head as the elbow moves backward. If any of these circumstances exist, tightening of the grip of the subscapularis around the head of the humerus by moving its attachment to the greater tuberosity might correct all or any one of such tears or relaxations.

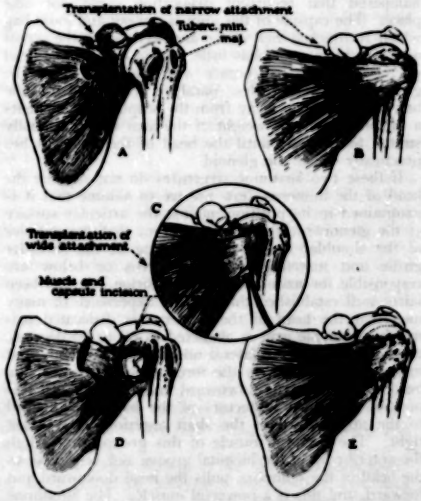

Fig. 3.—Medial reflection of tendinous attachment and exposure of head of humerus.

McLaughlin and we may be viewing the disability from opposite sides and arriving at the same conclusions.

To our minds this explanation is much more reasonable from the anatomic pathologic standpoint than weakening of the capsule. In all probability it is a

1. Nicola, Toufick: Recurrent Anterior Dislocation of the Shoulder, J. Bone & Joint Surg. 11:128-132 (Jan.) 1929.
2. Stack, James K., and Magnuson, Paul B.: The Nicola Operation: An Analysis of Failures, Quart. Bull. Northwestern Univ. M. School 14:108-113 (No. 2) 1940.
3. Kernwein, Graham: A Study of Tendon Implantation into Bone, Surg., Gynec. & Obst. 75:794 (Dec.) 1942.
4. Bankart, A. S. Blundell: The Pathology and Treatment of the Recurrent Dislocation of the Shoulder, Brit. J. Surg. 26:23 (July) 1938.
5. McLaughlin, Harrison L.: Personal communication to the authors.

combination of improper support anteriorly by the tendons of the subscapularis and partial detachment of the supraspinatus and infraspinatus, which leaves a gap above the shoulder and weakens the support that normally resists the adductor muscles and the violence.

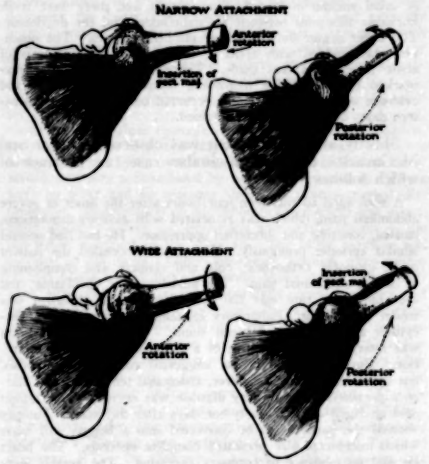

Fig. 4.—Method of attachment of muscle and tendon under head of humerus.

Recurrent dislocations occur in epileptic much more frequently than in any other class of patients. This would seem to indicate that muscle imbalance and nonsynchronization between groups of muscles have definitely to do with recurrent dislocation. The group of 6 cases here reported with a new operation for the cure of recurrent dislocation of the shoulder includes 2 with epilepsy who had had many recurrences; 3 recurrent dislocations, all in men performing heavy work or violent exercise, and 1 patient on whom there had been no previous operation. Not enough time has elapsed to call the cures 100 per cent. The first operation was performed two years ago and the last six months ago. All the patients have normal shoulder function and none have had any recurrence to this date. Five year cures are much more impressive than one year cures; however, it does seem that the operation here described is much more simple, more easily performed and more logical than others so far devised, and it is therefore being reported, possibly prematurely, but with the hope that other surgeons will attempt it and report in the future.

OPERATION

An incision is made over the junction of the anterior and medial third of the deltoid, extending from the acromion downward. Muscle fibers are split and separated to expose the anterior surface of the capsule. The arm is rotated externally and the tendon of the subscapularis is picked up with a narrow smooth retractor. Observation is made of the width of this attachment and how far toward the origin of the subscapularis the blending of the tendon and capsule occurs. In one of our cases there was no blending whatever; the tendon was entirely separate from the capsule up to its attachment and was so narrow that with the arm placed in abduction and extension the tendon could be seen to slip between the head of the humerus and the coracoid (fig. 2). In this particular case there was no support from this muscle when the arm was in the extended abducted position.

If it is found that the tendon blends with the capsule, the tendon is pulled tight with the retractor and an incision is made, following the upper and lower borders of the subscapularis muscle from the musculotendinous junction to its attachment along the anterior lip of the bicipital groove. A chisel is then driven in on the distal side of the attachment medial to the lip of the bicipital groove, so that this groove is not weakened or made shallow. The tendinous attachment, with a wedge shaped piece of bone, is lifted, and the capsule and the tendinous attachment are reflected medially to expose the head of the humerus and the anterior edge of the glenoid (fig. 3). Inspection can be made of the glenoid and the head of the bone through this opening, and it can be determined easily whether or not the capsule has been torn loose from the glenoid.

After inspection, the arm is brought into internal rotation and, with a suture through the attachment of the subscapularis tendon, the tendon is stretched across the bicipital groove to the greater tuberosity and held there while the arm is manipulated to see how much external rotation will be permitted by the subscapularis muscle. The attachment of this muscle should be moved over onto the greater tuberosity far enough really to tighten it up in 50 per cent external rotation, thus forming a roof for the long head of the biceps. When the new location for the subscapularis attachment is determined, a sharp, thin bladed chisel is driven into the greater tuberosity, with the edge of the blade held parallel to the long axis of the bone. The chisel is moved back and forth laterally to spread the cancellous bone and leave a wedge shaped gutter, into which is forced the wedge shaped piece of bone attached to the

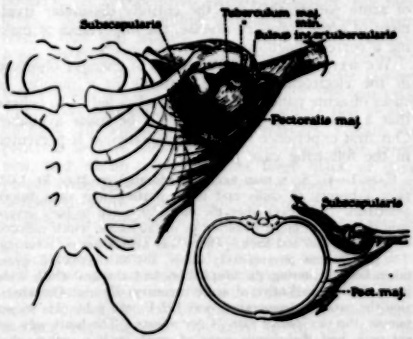

Fig. 5.—Tendon and muscle of subscapularis winds firmly around head of humerus.

subscapularis tendon. The tendon is sutured to the capsule with a doubled 00 chromic catgut suture and the sutures are repeated on both sides of the wedge so that the sides of the gutter are firmly in contact with the inserted bone. The lower border of the muscle and tendon are then tacked down by interrupted sutures

far enough under the head of the humerus so that the muscle and capsular tendon have a firm grip around the head, with no tendency to slip up toward the coracoid and glenoid when the arm is brought into abduction and external rotation (fig. 4).

If the operation is properly performed there will be, at its conclusion, 25 to 50 per cent limitation of external rotation. The arm should be moved through internal and external rotation to see whether the mechanical requirements have been achieved and that the tendon and muscle of the subscapularis winds firmly around the head of the humerus in both positions (fig. 5). If the details have been properly carried out the procedure forms a musculotendinous cup around the head of the humerus in both external and internal rotation, which resists the downward and forward displacing effect of the adductors of the humerus—a powerful group. In this group of cases the operation has served to maintain the head of the humerus in position under severe stress, when other forms of operation have failed.

700 North Michigan Avenue.

CHANGES IN THE ELECTROCARDIOGRAM INDUCED BY ACUTE PANCREATITIS

A CLINICAL AND EXPERIMENTAL STUDY

JULIUS GOTTESMAN, M.D.
DANIEL CASTEN, M.D.
AND
ABRAHAM J. BELLER, M.D.
NEW YORK

Acute pancreatitis frequently presents many bizarre symptoms and physical signs, so that its differential diagnosis from other acute conditions, especially acute coronary occlusion and perforated peptic ulcer, presents many difficulties. As most observers are in agreement concerning the conservative or nonoperative treatment of acute pancreatitis and the entirely dissimilar treatment of acute coronary disease, the importance of making a correct diagnosis is obvious.

We were impressed by a series of changes observed in the electrocardiographic patterns in a number of cases of acute pancreatitis, and this has led us to believe that a new aid in diagnosis might be made available. Our first experience with this phenomenon is presented in the following case report:

Case 1.—G. S., a man aged 38, admitted on May 30, 1938, gave a history of chills and fever starting four days before admission. Two days after the onset he began to have severe pain in the right upper quadrant of the abdomen, which radiated to the right loin and back. There was nausea but no vomiting. The pain became progressively worse, and an electrocardiogram taken before entering the hospital showed changes which were interpreted as indicative of acute coronary closure. On admission the patient's temperature was 102 F., the pulse rate 96 per minute, the respiratory rate 24 per minute. The heart was not enlarged, and the sounds were of good quality and regular. There were no murmurs. The blood pressure was 110 mm. systolic and 54 mm. diastolic. There was no abdominal distention, but pronounced tenderness in the right upper quadrant associated with muscle spasm and rebound tenderness was present. Laboratory examinations showed a white blood cell count of 17,500 per cubic millimeter with 85 per cent polymorphonuclear leukocytes. The urine was alkaline and negative except for a faint trace of albumin. A scout film of the abdomen was negative. On May 30, 1938 an electrocardiogram showed notching of P_2 and P_3 and premature auricular contractions. Because of the persistence of the abdominal signs and the difficulty in excluding acute gallbladder disease, an exploratory celiotomy was decided on and performed on June 1. A small amount of free fluid was found, and there were fresh fibrinous adhesions between the gallbladder and the duodenum. The latter organ showed subserosal hemorrhages. The omentum was studded with areas of fat necrosis. A diagnosis of acute pancreatitis was made. The postoperative course was marked by progressive distention, temperature elevation and evidence of peritonitis. Death occurred on the fifth postoperative day. No autopsy was obtained.

Shortly after this patient was observed, Dittler and McGavack[1] reported a similar case, an abstract of which follows:

A man aged 53 was seen four hours after the onset of severe abdominal pain, which was associated with gaseous eructations, nausea, vomiting and substernal oppression. He had had several similar episodes previously. Examination revealed the patient to be cyanotic, orthopneic, cold and clammy and complaining of severe abdominal pain. The auricles were fibrillating, and the ventricular rate was 120 per minute. The abdomen was tender throughout. Laboratory examinations revealed a leukocytosis and an elevated blood sugar. The electrocardiogram was interpreted as indicative of a posterior myocardial infarction. Further clinical course suggested coronary thrombosis, but upper abdominal pain, fever, abdominal tenderness and diarrhea persisted. The urinary diastase was normal. The patient died on April 26, 1937, forty-one days after the onset. Autopsy showed the pancreas to be converted into a boggy, soft mass which microscopically presented complete necrosis. The heart showed no evidence of coronary occlusion. The vessels were patent. The heart muscle was hypertrophied and showed little or no myocardial fibrosis.

In both of these cases definite electrocardiographic changes were observed during the course of the illness leading to a diagnosis of acute coronary disease, and in both the subsequent course demonstrated the presence of acute pancreatic necrosis. Our interest in this phenomenon was stimulated, so that we began to do routine electrocardiographic studies on patients with acute abdominal complaints. We have observed 4 subsequent cases, in all of which the diagnosis of acute pancreatitis was confirmed by either the clinical course (including blood amylase studies), operation or autopsy. Case reports are appended herewith:

Case 3.—E. B., a Negro aged 38, admitted to the Hospital for Joint Diseases on Dec. 5, 1941, had had abdominal pain, nausea, vomiting and obstipation for five days following directly after severe alcoholic excesses. The pain was severe and cramplike. The vomitus contained bile but no fecal material. On admission the temperature was 99.8 F., the pulse rate 88 per minute, the respiratory rate 18 per minute. The lungs were normal. The heart sounds were good, no murmurs were present, and the blood pressure was 105 mm. systolic and 82 mm. diastolic. The abdomen was not distended. Tenderness was present in both upper quadrants with rebound tenderness and muscle spasm. A scout film of the abdomen showed several fluid levels. Laboratory examinations were normal except for a slight leukocytosis, a faint trace of albumin in the urine and a positive test for blood in the stools. The Kahn test was 1 plus and the sedimentation rate 65 mm. Several blood amylase studies were performed. On admission the blood amylase was 410 units. This progressively declined until on December 11 it was 315 units, on December 22, one day before discharge, it was 303 units and on December 28 it was 254 units. Several electrocardiograms were taken. On December 5 the

From the Laboratories and Surgical Services of the Hospital for Joint Diseases.

1. Dittler, E. L., and McGavack, T. H.: Pancreatic Necrosis Associated with Auricular Fibrillation and Flutter, Am. Heart J. 16: 354 (Sept). 1938.

electrocardiogram showed a depressed RT_{3-4} and diphasic T_{1-3-4}. This was interpreted as evidence of myocardial damage. On December 8 there was inversion of T_3, T_2 was diphasic, RT_4 was depressed, and again the diagnosis of myocardial damage was made. On December 11 T_{1-2} were isoelectric, and T_4 was inverted. The clinical course was very suggestive of pancreatitis, and within two weeks all symptoms had subsided. On many occasions the heart was examined and was found perfectly normal despite the changes in the electrocardiograms, which were interpreted by the cardiologists as indicating coronary thrombosis. On discharge the patient was completely well. Follow-up studies revealed normal electrocardiograms.

CASE 4.—R. H., a woman aged 50, admitted to the Hospital for Joint Diseases on Sept. 24 and discharged on Nov. 3, 1941, complained of diffuse cramplike pain in the abdomen, particularly on the left side, two days before admission. The pain radiated to the back, was intermittent in character and fairly severe, and was accompanied by nausea and vomiting. There were no fever and no previous history of gastrointestinal disturbances. Examination on admission to the hospital was essentially negative except for tenderness and muscle spasm in the left upper quadrant of the abdomen. The blood amylase was elevated to 367 units. Other laboratory findings were within normal limits except for a moderate leukocytosis. Two days after admission a fairly severe paralytic ileus developed and persisted for several days but eventually responded to suction treatment with a Miller-Abbott tube. The blood amylase decreased to 89 units three days after admission. Complete roentgenographic examination of the gastrointestinal tract after recovery revealed only a poorly functioning gallbladder. The electrocardiographic findings were of great interest. On the day of admission the tracings showed a slurring of QRS_{3-4}. Three days later the electrocardiogram was still abnormal, showing a slurring and notching of QRS_3, low T_{1-4} and depressed RT_3. On October 7, by which time recovery was almost complete, the electrocardiogram was normal. At no time was there any clinical evidence of heart disease.

CASE 5.—I. B., a man aged 63, admitted to the Hospital for Joint Diseases on March 13 and discharged on April 29, 1941, first experienced severe, cramplike epigastric pain about twenty-four hours before admission to the hospital. He had four watery, black bowel movements. The pain became progressively more severe and was associated with vertigo and shortness of breath. On admission the patient was in acute distress, orthopneic and dyspneic. The temperature was 101 F., the pulse rate 96 per minute and the respiratory rate 22 per minute. The heart was normal except for an accentuated and bell-like aortic second sound and an occasional extrasystole. The blood pressure was 164 mm. systolic and 110 mm. diastolic. There were definite resistance to pressure in the epigastrium and great tenderness and rebound tenderness in this area. No masses were palpable. The urine was normal except for a diastase of 968 units. The white blood cells numbered 21,600 per cubic millimeter. The sedimentation rate was 26 mm. and the blood amylase was 133 units. Several days after admission the blood amylase rose to 353. The course continued acute for about six days, and then the patient improved rapidly. The diagnosis of acute pancreatitis was made by both medical and surgical services.

The electrocardiographic findings were as follows:

March 13 (3 a. m.), T_3 inverted, T_2 low.
March 13 (4 p. m.), $T_{1,2,3}$ inverted.
March 14, $T_{1,2,3}$ inverted.
March 17, $T_{1,2,3}$ inverted.
March 21, T_1 and T_2 inverted. T_3 diphasic. Occasional premature ventricular contractions.
April 1, T_1 and T_2 diphasic. T_3 upright.
April 3, T_1 low and upright. T_2 and T_3 normal.
April 28, $T_{1,2,3}$ diphasic (interpreted as normal).

CASE 6.—D. W., a woman [2] aged 68, had been in good health except for hypertension for many years. The day prior to admission she complained of nausea and vomited three or four times. Weakness was pronounced at the onset, and shortly thereafter she experienced severe upper abdominal pain which was relieved by morphine. She became progressively more prostrated and went into shock about one hour before admission. At this time she appeared acutely ill, in shock, with rapid sighing respirations, cyanosis, particularly acral cyanosis, and cold upper extremities. The neck veins were distended. There were no heart murmurs, and the blood pressure was 50 mm. systolic and 40 mm. diastolic. There was a gallop rhythm over the entire precordium. The abdomen was slightly distended. The liver edge was not palpable. All reflexes were absent. The temperature on admission was 104 F. The electrocardiogram showed a sinus tachycardia, left axis deviation, small Q_3, deep $Q_{3,3,4}$, RT elevation in all leads, T_3 low. The changes were characteristic of acute anterior and posterior wall infarction, and the clinical diagnosis of acute coronary thrombosis was made. Death occurred three hours after admission. The autopsy revealed acute pancreatitis with fat necrosis involving the body of the pancreas, an acute fibrinopurulent peripancreatitis and early acute peritonitis. The pericardial cavity contained 50 cc. of brownish red fluid. There was slight dilatation of the left ventricle. The coronary arteries were patent throughout. There was no acute infarction. The mitral valves showed a chronic rheumatic valvulitis.

The preceding case reports illustrate a consistent occurrence of electrocardiographic changes in pancreatitis. Some of the patients had only a mild pancreatitis, while others manifested a true hemorrhagic pancreatitis. The changes in the electrocardiographic pattern were not the same in all cases, yet they were of sufficient degree to be interpreted as myocardial infarction or coronary thrombosis. In all patients in this group the subsequent course with either death or recovery showed no evidence of an actual pathologic condition of the heart and we felt justified in assuming that the transitory changes in the electrocardiograms were due to the pancreatitis.

In an effort to determine whether these changes could be duplicated, a series of animal experiments was undertaken. It is very easy to induce acute pancreatitis in dogs by the injection of various materials into the pancreatic duct. The following technic was used: [3] Dogs weighing about 8.5 Kg. were anesthetized with intravenous pentobarbital sodium (0.2 cc. per pound). A preoperative electrocardiogram was then taken. Through a midline incision the accessory pancreatic duct was isolated and a suture placed around it but not tied. The duct was entered with a fine hypodermic needle and 5 cc. of 12 per cent sterile sodium taurocholate solution was injected into the pancreas. The needle was withdrawn and the suture tied around the duct. The abdomen was closed in layers. Usually the pancreas became hemorrhagic immediately after injection, and within a few minutes large black or dark purple areas appeared throughout the gland. All dogs developed acute hemorrhagic pancreatitis. Electrocardiograms were taken immediately and at intervals of twelve or twenty-four hours until the animals died. The survival period varied from one to twelve days and at autopsy acute pancreatic necrosis was found in each animal. Five dogs were operated on in this manner. Control electrocardiograms were taken on anesthetized but dogs not operated on to rule out the possibility that any changes noted might be due to anesthesia. In all dogs in which pancreatitis was produced, distinct aberrations of the electrocardiographic tracings were observed. These changes were inconstant in pattern but were usually interpreted as being indicative of myocardial damage. In none of the dogs was there

2. This patient was in the service of Dr. Eli Moschowitz at the Mount Sinai Hospital, who gave us permission to report the case.

3. Gottesman, Julius; Casten, Daniel, and Beller, A. J.: Electrocardiographic Changes Associated with Acute Pancreatitis, Proc. Soc. Exper. Biol. & Med. 49:365 (March) 1942.

either gross or microscopic evidence of myocardial damage or infarction. It must be mentioned that electrocardiograms in dogs are difficult to interpret and show variation due to changes in position and shifting of the mediastinum. To overcome this source of error, a normal pattern was established for each dog and standard conditions for obtaining the electrocardiographic tracing were observed.

ANALYSIS AND INTERPRETATION OF RESULTS

Changes in the electrocardiographic patterns have been observed in a variety of abdominal conditions, particularly those associated with disease of the biliary system, such as cholelithiasis, chronic cholecystitis or common duct stones. The mechanism of these changes is in dispute. It has been postulated that these variations are the result of reflex stimulation of the autonomic nervous system. Chamberlain, Scudder and Zwemer [4] observed changes in the electrocardiograms of cats in which a hyperpotassemia was induced by intraperitoneal injection of potassium chloride. In several clinical conditions associated with release of potassium ion from damaged cells such as intestinal obstruction or pancreatitis these observers noticed electrocardiographic changes. The frequent association of pancreatic pathologic changes in the presence of chronic biliary tract disease may account, in the light of our clinical and experimental studies, for the changes so frequently observed in the electrocardiogram.

The clinical similarity between acute coronary thrombosis and acute pancreatitis is too well known to require further elaboration. We wish to point to a triad of symptoms which we feel should help to establish definitely this difficult diagnosis. These are (1) elevated blood amylase, (2) signs of upper abdominal peritoneal irritation and (3) variation from the normal in the electrocardiographic tracing, which may simulate coronary disease or myocardial infarction.

The possibility that these electrocardiographic changes could be produced by shock, regardless of the causative factors, has been entertained. We have made repeated electrocardiographic studies on patients in clinical shock as a result of perforated peptic ulcer, intestinal obstruction, and after extensive surgical procedures on the gastrointestinal tract (gastrectomy, abdominoperineal resection, cholecystectomy for acute cholecystitis), and in none of these patients was the electrocardiogram interpreted as abnormal.

SUMMARY AND CONCLUSIONS

1. In a series of cases of acute pancreatitis, electrocardiographic abnormalities suggestive of myocardial infarction or coronary thrombosis was noted.

2. These changes in the electrocardiograms were induced in experimental acute pancreatitis in dogs.

3. Routine electrocardiographic studies in patients presenting acute upper abdominal syndromes should be done.

4. The triad of (*a*) elevated blood amylase, (*b*) upper abdominal peritoneal irritation and (*c*) electrocardiographic changes should establish the clinical diagnosis of acute pancreatitis.

1185 Park Avenue.

4. Chamberlain, F. L.; Scudder, John, and Zwemer, R. L.: Electrocardiographic Changes Associated with Experimental Alterations in Blood Potassium in Cats, Am. Heart J. **18**:458 (Oct.) 1939.

NAIL PUNCTURE WOUNDS

SUMMARY OF THE RESULTS OF TREATMENT IN 721 CASES

JOHN F. McDONNELL, M.D.
D. A. WALLACE, M.D.
AND
JEROME E. ANDES, PH.D., M.D.
LAWRENCE, KAN.

The care of nail puncture wounds in industry is important, especially in construction projects. In such projects boards containing nails are ubiquitous, and it is a simple matter to puncture some part of the body, especially the foot, by coming in contact with a nail. If the ground is muddy the injuries become even more common and the danger of infection more acute. Furthermore, the workman who suffers a nail puncture faces the possibility of two undesirable conditions: (1) secondary infection with a possible loss (or loss of function) of some part of the body and (2) tetanus, owing to the fact that nail puncture wounds are ideal for the growth of anaerobic organisms. The management is concerned not only with the loss of time on the part of useful employees but also with the expense incurred in caring for these occupational injuries. It is of interest to every one to have any data which might aid in the satisfactory treatment of such injuries.

A review of the literature of the last eight years reveals few reports of a nature comparable to that which we are presenting. Bowen [1] reported 661 cases of nail puncture wounds with no deaths, no tetanus and a disability average of 0.6 day. He opposed probing the wound and gave tetanus antitoxin to all. Walker [2] reported 220 cases with a method similar to that described here with no time lost except the remainder of the working day. He gave tetanus antitoxin to all and advised against soaking the foot. Festerling [3] reported no cases but described his method; he used a silkworm gut drain and did not give tetanus antitoxin. Kerrigan [4] did not give separate statistics but described the technic used in 445 puncture wounds. This consisted of scrubbing with neutral white soap solution, débridement at the point of entry, immobilization and injection of tetanus antitoxin in every case. There are many reports on the general care of wounds, but they do not concern puncture wounds by themselves.

REPORT OF CASES

At the Sunflower Ordnance Works Hospital during the period of June 1942 to March 1943 721 men were treated for nail puncture wounds. The results of treatment are set forth briefly in the accompanying table.

In the consideration of this subject we should call to mind that the period of time mentioned was accompanied by an excessively large amount of rain in Kansas and that most of the construction work was done (literally) in mud! Furthermore, the mud was typical black Kansas soil supposed to be well contaminated with anaerobic organisms of the tetanus type.

From the Medical Department, Sunflower Ordnance Works.

1. Bowen, F. H.: Report of Six Hundred and Sixty-One Nail Puncture Wounds, J. A. M. A. **121**:413-414 (May 30) 1942.
2. Walker, M. A.: Treatment of Nail Puncture Wounds, J. Kansas M. Soc. **43**:453 (Nov.) 1942.
3. Festerling, E. G.: Simple Treatment for Puncture Wounds, Am. J. Surg. **36**:360-361 (April) 1937.
4. Kerrigan, R. L.: Exclusive Use of Soap and Water in Traumatic Wounds, Surg., Gynec. & Obst. **57**:165-169 (Aug.) 1942.

Technic.—The area surrounding the puncture wound was scrubbed well with liniment of soft soap and water, then wiped dry with sterile gauze. With pointed scissors and small thumb forceps the edges of the wound were trimmed away through the entire thickness of the skin, leaving a round hole the edges of which did not approximate. The wound was then probed gently with a rough probe. This served to remove small particles of foreign matter and to determine the direction and the depth of the puncture. A blunt needle attached to a syringe was inserted in the direction and to the depth indicated by probing. From 1 to 2 cc. of antiseptic solution was injected and allowed to return outside the needle, thus irrigating the wound from its deepest point outward. This served to wash out small foreign bodies and other contaminants. Hydrogen peroxide solution, tincture of merthiolate and tincture of metaphen were used for this purpose. As more wounds were treated it was felt that a nonalcoholic antiseptic solution was better, hydrogen peroxide being found satisfactory. A dry sterile dressing was applied, and the patient was told to continue working and report back the next day; any swelling or excessive tenderness, however, was to be reported immediately.

Tetanus antitoxin, 1,500 units, was given in 54.4 per cent of the cases. The decision as to whether or not tetanus antitoxin should be given was left to be determined in each individual case. Any person whose wound showed evidence of gross contamination was given tetanus antitoxin immediately. Many times it was given merely because the wound seemed excessively deep. Practically all those with wounds over ½ inch deep were given the serum. Men with severely contaminated wounds were given mixed gas bacillus-tetanus antiserum. Several of the patients requested the serum themselves. The final decision as to whether or not to use it was usually made on the second day. Signs of infection, pain, tenderness, fever, swelling and regional adenopathy were taken as evidences of contamination, and tetanus antitoxin was given. When administering tetanus antitoxin, it was the rule to start with the intradermal sensitivity test. To those giving positive reactions, either the serum was not given or, if definitely indicated, was given in divided doses. Tetanus antitoxin was given to 392 patients. There were five reactions, none constitutional and none severe.

Results of Treatment of Nail Puncture Wounds

Site of Injury	Cases	Cases in Which Tetanus Antitoxin Was Given: No.	%	Treatments per Case	Morbidity in Days *	Cases in Which Wound Was Secondarily Infected: No.	%	Disability in Days per Case	Cases in Which Time Was Lost: No.	%	Days Lost per Each Lost Time Case
Foot	424	275	65	1.36	2.23	24	5.6	0.118	7	1.6	7.14
Hand	208	86	41	1.55	2.26	16	7.7	0.096	1	0.5	2.0
Arm	42	18	43	1.62	2.65	1	2.4	0.0	0	0.0	0.0
Leg	34	10	29	1.44	1.82	2	5.9	0.0	0	0.0	0.0
Body	3	1	33	1.33	1.67	0	0.0	0.0	0	0.0	0.0
Head and neck	10	2	20	1.60	2.00	0	0.0	0.0	0	0.0	0.0
Totals	721	392	54	1.36	2.22	43	6.0	0.072	8	1.1	6.5

* This includes time until calls at the hospital were discontinued.

Local infection developed in 43 of the 721 patients. Eleven of the 43 had not reported the wound until an average of 2.5 days had elapsed from the time of injury. Six of the 43 had infection severe enough to lose time, losing 8.16 days on the average.

Two men, one with a puncture of the hand and one with a puncture of the foot, lost two and one days, respectively, because of local tenderness, but no other signs of infection were present. One wound healed quickly and gave no trouble until twenty-eight days later, when tenderness developed. When the wound was reopened a foreign body, which seemed to be a small piece of rubber boot, was removed. The patient recovered immediately.

Patients with mild infection were told to soak the affected part at home in hot epsom salt water. For more severe infection this treatment was supplemented with daily soaks at the hospital. Patients whose infection was frankly serious were hospitalized at the plant or referred to outside physicians to be cared for in the home or a hospital.

COMMENT ON RESULTS

The extremely low disability in all cases is significant. Furthermore, as we have already pointed out, a large share of these puncture wounds were from nails contaminated by soil, and in many cases the shoe itself, in which the patient had been working, was sodden with mud. A few patients were actually working in old manure areas. The average disability listed is only 0.07 day. The highest percentage of disability was 0.118 day per patient. There were no days lost by patients with wounds other than in the foot or the hand. Of the 721 men treated only 8 lost any time whatever. This figure is only 1.1 per cent of the total number. The average number of days lost for those who did lose time was 6½ days per patient.

We attribute the extremely low disability to two things: (1) the cooperation of employees in coming in immediately for treatment and (2) proper cleansing of the wound. There is nothing further to say, as the description of our procedure and the table itself, are sufficiently explanatory.

SUMMARY

The recent literature contains few reports of the nature of this one.

In a nine month period of much rain and mud 721 men were treated for nail punctures with satisfactory results. The average disability was only 0.072 day per injury.

The technic used consisted of (*a*) cleansing the outside of the wound, (*b*) trimming skin flaps and wound edges, (*c*) probing to the bottom of the wound, (*d*) irrigating with antiseptic solution from the bottom of the wound—hydrogen peroxide solution recommended, and (*e*) dry, sterile dressing.

Tetanus antitoxin was not given routinely. It was used when punctures were exceptionally deep or showed gross contamination or signs of infection.

In no patient did tetanus develop. Forty-three patients had secondary infection; 6 had infection severe enough to lose time. There were no deaths.

First Medical Schools in America.—In the American colonies the early medical schools developed within the academic organization. The first of these was set up at Philadelphia in 1765 as part of the College of Philadelphia (later the University of Pennsylvania). The Medical School of King's College in New York (which was eventually to become the College of Physicians and Surgeons of Columbia University) was the second in 1768. The Harvard Medical School, the third institution of its kind in the colonies, was opened in 1783, having developed from a lecture course in anatomy given to Harvard College students during the three previous years by the surgeon John Warren. All three of these schools were organized by the best qualified physicians of the respective communities; they set a high standard and had a strong influence on the subsequent development of American medicine.—Haagensen, C. D., and Lloyd, Wyndham E. B.: A Hundred Years of Medicine, New York, Sheridan House, Inc., 1943.

Clinical Notes, Suggestions and New Instruments

MASSIVE RESECTION OF THE JEJUNUM AND ILEUM FOR GUNSHOT WOUNDS OF THE SMALL INTESTINE AND ITS MESENTERY

METABOLIC STUDY FOLLOWING RECOVERY

MAJOR ROBERT A. WISE
MEDICAL CORPS, ARMY OF THE UNITED STATES
AND
FIRST LIEUTENANT MONROE J. ROMANSKY
MEDICAL CORPS, ARMY OF THE UNITED STATES

Resection is frequently indicated in the treatment of penetrating wounds of the small intestine and its mesentery. Wounds which have destroyed a section of the bowel, impaired its blood supply by injuries to its mesentery or caused large contiguous lacerations cannot be closed. Such wounds require resection. These lesions requiring resection may be multiple, involving various segments of the intestine with normal bowel between them. It is important to determine whether a single resection of the multiple wounds can be performed or whether multiple resections of the involved segments shall be undertaken. It is recognized that multiple resections definitely increase the mortality. There is no recorded case of a successful triple resection during World War I. If a single resection of the involved segments of bowel is elected, it may be necessary to remove an extremely long section. Therefore the total length of small bowel which can safely be removed without inducing severe metabolic disturbance must be known. Haymond,[1] in a review of 257 cases of massive resection of the small intestine, states that 33 per cent of the small bowel can be removed without nutritional disturbance, 50 per cent removal being the upper limit of safety.

The case reported here illustrates the metabolic balance obtained after removal of 8 feet of jejunum and ileum for multiple gunshot wounds involving the bowel and its mesentery.

REPORT OF CASE

E. A. T., white, a private First Class, aged 26, was admitted to Walter Reed General Hospital on Dec. 9, 1942 by ambulance from a nearby army camp. One hour and fifteen minutes before admission the patient had been accidentally shot in the abdomen with a 0.45 caliber revolver. The point of entrance of the bullet was in the left lower quadrant; there was no point of exit.

Examination on admission revealed that the patient was in shock; the extremities were cold, the skin pale. The blood pressure was 90/60, the pulse 120, weak and thready in character. Abdominal examination revealed a bullet wound in the left lower quadrant 10 cm. below and 7 cm. to the left of the umbilicus. There was pronounced rigidity throughout the abdomen, associated with exquisite generalized tenderness. Liver dulness was not obliterated. There was shifting dulness in both flanks. The red blood count was 3,640,000, the hemoglobin 65 per cent; the white blood count was 40,000 with 74 per cent polymorphonuclears. The hematocrit was 25 per cent. A scout film of the abdomen showed that the bullet was embedded in the right acetabulum.

The signs and symptoms indicated intraperitoneal hemorrhage associated with intestinal perforation, and immediate operation was performed.

At operation, two and one half hours after injury, with cyclopropane-oxygen anesthesia, the abdomen was opened through a long left rectus incision. Approximately 1,200 cc. of blood was found in the peritoneal cavity and fresh bleeding occurred from three large lacerations in the mesentery of the small bowel. There were seven perforations in the jejunum and ileum, three of these destroying more than two thirds of the circumference of the bowel. The highest perforation was approximately 8 feet from the ligament of Treitz; the others, except for one, were situated in the adjoining 8 feet of the jejunum and ileum. One perforation 1.5 cm. in diameter was in the terminal ileum 5 cm. from the ileocecal valve. There were three large wounds in the mesentery of the small intestine near its base, and the bowel in two areas of approximately 2 feet in length was blue-gray, showing definite evidence of impaired circulation. There was gross contamination of the peritoneal cavity by fecal contents of the small bowel. There were no perforations in the large bowel, bladder or stomach.

The massive hemorrhage from the mesenteric wounds was first controlled. Eight feet of jejunum and ileum, including the six perforations and the bowel with impaired circulation, was resected after ligation of the mesentery with suture ligatures. A side to side anastomosis was performed after the open ends of the small bowel were inverted. The perforation in the terminal ileum was closed with Connell suture, the closure being reinforced with Lembert stitches. No attempt was made to remove the bullet from the right acetabulum. Ten Gm. of sulfanilamide was placed in the peritoneal cavity and the wound was closed in layers without drainage. The bullet wound of entrance in the abdominal wall was rapidly debrided. During operation 1,500 cc. of citrated blood and 2,000 cc. of plasma were given and, at the close of the operation, the blood pressure was 145/90 and the pulse rate 100.

TABLE 1.—*Nitrogen Balance*

Date	Nitrogen Intake Gm.	Fecal Nitrogen Gm.	Nitrogen Absorbed Gm.	Urinary Nitrogen Gm.	Nitrogen Balance Gm.
3/31/43	13.28	1.72	11.56	11.2	+0.36
4/ 2/43	13.28	1.9	11.38	10.8	+0.58

TABLE 2.—*Study of Feces*

Date	Weight Gm.	General Appearance	Blood	Total Fat Per Cent
3/31/43	184	Normal	Negative	20.5
4/ 2/43	175	Normal	Negative	22

TABLE 3.—*Serum Proteins*

Date	Total Proteins, Gm. per 100 Cc.	Serum Albumin, Gm. per 100 Cc.	Serum Globulin, Gm. per 100 Cc.	Albumin: Globulin Ratio	Non-protein Nitrogen, Mg. per 100 Cc.
3/22/43	5.13	2.3	2.83	1/1.2	30
4/12/43	5.80	3.85	2.04	1.9/1	30
4/14/43	6.24	4.62	1.62	2.8/1	28
4/21/43	6.91	5.2	1.71	3/1	30

Immediately after operation a Levine tube was placed in the stomach and continuous suction applied. The patient was given sulfadiazine intravenously and the blood level was maintained at 12 mg. per hundred cubic centimeters. Fluid balance was maintained by daily infusions of 5 per cent dextrose and saline solution, blood plasma and blood transfusions. To maintain fluid balance it was necessary on the fourth postoperative day to give 6,000 cc. of fluid intravenously. A daily blood count and hematocrit were taken and the blood chlorides checked repeatedly. The patient developed a mild alkalosis with the carbon dioxide combining power 71 volumes per cent, which was controlled by intravenous sodium chloride. On the fifth postoperative day the Levine tube was removed and 1 ounce (30 cc.) of water given every hour. This amount was increased to 2 ounces the following day, and thereafter increasing amounts of fluid and food were given. Vomiting did not occur at any time after operation. The first bowel movement was on the sixth postoperative day. For several days the bowels moved three or four times daily and the stools were watery. However, after the tenth postoperative day the bowels moved once daily and the stools were solid. The temperature remained at 102 F. until the tenth postoperative day, when it dropped to normal and remained normal throughout convalescence. The operative incision healed by first intention and the bullet wound of entrance healed cleanly by granulation. The patient was

From the Surgical Service, Walter Reed General Hospital.

1. Haymond, H. E.: Massive Resection of the Small Intestine, Surg., Gynec. & Obst. 61: 693 (Nov.) 1935.

allowed out of bed on the twenty-eighth postoperative day. He was given a furlough, and on return metabolic studies were instituted.

METABOLIC STUDIES

On March 19, the eighty-ninth postoperative day, the patient was placed on a general diet containing 3,127 calories, with protein 83 Gm., fat 111 Gm. and carbohydrate 448 Gm. The nitrogen content of this diet was 13.28 Gm. The factor 1/625 was used for conversion to nitrogen. Stools and urines were collected, the former in concentrated sulfuric acid, the latter under xylene, and the twenty-four hour contents of the twelfth and fourteenth day were determined for nitrogen and fat. The micro Kjeldahl method was used to determine the urinary nitrogen and serum proteins, while the macro Kjeldahl was used for fecal nitrogen. All determinations were done in triplicate. Total fat was done by Saxon's method. The results are shown in tables 1 and 2. Serum protein studies are presented in table 3.

In addition to the results shown a dextrose tolerance test and gastric analysis were normal. The blood cholesterol was 188 mg. per hundred cubic centimeters, cholesterol esters 81 mg. per hundred cubic centimeters, calcium 10.4 mg. per hundred cubic centimeters and phosphorus 3.7 mg. per hundred cubic centimeters. Routine hematologic and urine examinations were normal. The patient showed a progressive gain in weight as follows: Jan. 5, 1943, 145 pounds (66 Kg.); February 4, 152 pounds (69 Kg.); March 7, 156 pounds (71 Kg.); April 23, 160 pounds (72.6 Kg.). The patient's normal weight, prior to the accident, was approximately 165 pounds (75 Kg.).

The results indicate that the patient's metabolic functions were normal. The fact that the studies showed a positive nitrogen balance and a progressive increase in serum proteins indicated that a depletion of body protein had existed for several months subsequent to operation but was being rectified.

It cannot be ascertained from this case just how much bowel can be resected without causing pronounced metabolic changes. However, it is shown that normal metabolic function can be maintained with resection of 8 feet of the small intestine.

FOLLOW-UP

The patient was examined on June 1, six months after operation. He had maintained his weight at 160 pounds. His bowels moved once daily and the stools were formed. The wounds were firmly healed. A gastrointestinal series showed that the stomach, duodenum and upper jejunum were normal. The distal jejunum showed slight dilatation and exaggerated peristalsis, while the mobility and peristalsis of the ileum were normal. The ileocecal region appeared normal and there was no abnormal retardation of the barium meal.

Appearance of specimen showing multiple perforations of the small bowel and its mesentery. Inset shows location of removed segment. (Army Medical Museum.)

COMMENT

This case illustrates several problems in the treatment of gunshot wounds of the small intestine.

Three segments of bowel required resection; the upper and lower segments because of pronounced impairment of their blood supply, the middle because of destruction of two thirds of the bowel wall in one area and almost complete severance in another. These three segments were all contained within 8 feet of small intestine. It was believed that a massive resection of the involved segments, together with interposed normal intestine, could be more rapidly and safely performed than three separate resections of the involved areas. Fortunately, many penetrating wounds of the intestine can be closed by suture and these wounds should never be resected. However, if the wounds are of such a nature that there is no alternative to resection it is suggested that a single resection, rather than multiple resections, be performed if the involved segments occur within an 8 to 10 foot length of bowel.

The thought of fecal contents pouring into the peritoneal cavity may be appalling and lead one to concentrate on rapid control of this contamination. It is the control of hemorrhage which must receive first attention. It is important to have blood available and flowing into the patient before the peritoneum is opened, for often bleeding temporarily stopped will recur on the first exploratory manipulation. At times, massive transfusions will be required to control shock during operation. This patient required 1,500 cc. of citrated blood and 2,000 cc. of plasma.

Too much emphasis cannot be placed on the importance of a final, careful search for additional perforations. It has been written that such a search should be made only if the patient's condition warrants it. Bohrer [2] states that "no matter what the condition of the patient, he will never be in better condition to close the last perforation." It was only after the final search in this patient that the perforation of the terminal ileum was discovered.

SUMMARY

1. In a case of multiple gunshot wounds of the small intestine and its mesentery requiring resection, normal metabolic function was maintained following resection of 8 feet of jejunum and ileum.

2. The treatment of associated hemorrhage is important.

3. If resection is indicated, a single resection rather than multiple resections should be performed for lesions lying within an 8 foot segment of intestine.

2. Bohrer, John V.: Personal communication to the authors.

Special Article

AMERICAN HEALTH RESORTS

THE ADMINISTRATION, SUPERVISION AND CONTROL OF HEALTH RESORTS

CYRUS B. ELMORE, B.E., M.Sc.
AND
WALTER S. McCLELLAN, M.D.
Superintendent and Medical Director, Respectively, the Saratoga Spa
SARATOGA SPRINGS, N. Y.

These special articles on spa therapy and American health resorts were prepared under the direction of the Committee on American Health Resorts. The opinions expressed are those of the authors and do not necessarily reflect the opinion of the committee. These articles may be published later as a Handbook on Health Resorts.

I. OWNERSHIP

Unlike most spas in continental Europe, American health resorts are generally privately owned. Such resorts as Hot Springs, Va., French Lick, Ind., Glen Springs and Sharon Springs, N. Y., Arrowhead Springs, Calif., those at Mineral Wells and at Marlin, Texas, and many others are in the hands of privately formed corporations or individuals. The best known examples of government owned resorts are the Thermal Water Reservation at Hot Springs, Ark., the New York State Spa at Saratoga Springs, the state controlled springs at Thermopolis, Wyo., and the municipal development at Excelsior Springs, Mo. A survey of the field shows that the form of ownership seemingly bears little relation to the extent of the medical and physical development of a resort.

II. ADMINISTRATION

Ownership is not always the deciding factor in the type of administration. Perhaps the factors of extent, of objective and of medical and physical development may be more truly determined by the type of administration than of ownership. Privately owned resorts may range from single sanatoriums of long time family ownership all the way through various median arrangements to the true spa of tremendous natural resources and extensive physical equipment, exacting medical control and adequate financing. Many privately owned health resorts in this country are under strictly private control whether by direct ownership or by control of a holding corporation. Where the owner is an individual, he or a close associate usually heads the administrative setup and may also be the executive head of the project, with the probable addition of medical, engineering, chemical or other technical administrators as needs may arise. Some of the better known watering places of this country, such as Mount Clemens, consist of a group of hotels or sanatoriums which has grown up around the source of mineral waters or in an area in which such waters are readily found.

If the administration of the health resort is the function of some governmental unit, several possibilities arise. At Hot Springs, Ark., the mineral water and the lands on which they emerge are owned by the federal government, and water is metered to a government owned charity bath house as well as to many privately owned hotels and bath houses which are operated for private gain but under very strict regulations set up by the United States Department of the Interior. State owned health resorts are generally administered by commissions or committees which are essential parts of major state departments. They may direct the complete operation of the spa or may grant concessions for its operation by private individuals or corporations. At Saratoga Springs the springs and lands are state owned with activities of the spa directly state operated, except the Cure Hotel.

In any case, of course, the duties of the administrative body of a health resort include the establishment of a general policy by defining the accredited values of the waters or climate and by determining the types of ailments to be treated, the types of patients to be received and the kind of accommodations and treatments to be furnished. A second duty is to plan for the financial setup of the resort. Such planning must cover the original investment—purchase of land and erection of buildings, installing equipment and so on—as well as an operating budget, including taxes, debt service and depreciation. It must also explore all sources of revenue either from endowment or from current receipts or, in the case of government owned spas, from legislative appropriation for maintenance, or a combination of all or any of these. The third duty of the administering body is the setting up of a definite operating organization with a corresponding program of duties and responsibilities.

III. OPERATION

For any health resort, whether large or small, a general operating outline can be considered which will naturally adapt itself to variations in the size, nature and objectives of any such resort. Essentials of such an organization are, of course, an executive head, whatever his title, and under him the necessary branches of responsibility, perhaps as follows:

(*a*) Medical.
(*b*) Engineering and construction.
(*c*) Chemical.
(*d*) Accounting.
(*e*) Legal.
(*f*) Maintenance.
(*g*) Public relations.

Only in large organizations will entirely separate departments be formed for each of these titles, but problems under each heading will exist and must be handled by the executive head or by some one under his direction. These various branches of the organization with proper interrelations will cover all fields of activity, which might be listed somewhat as follows:

(1) Mineral water control and conservation.
(2) Bath houses (therapeutic treatments).
(3) Hotels and boarding houses and sanatoriums.
(4) Recreational facilities: (*a*) library, concerts, theater, sporting events; (*b*) paths and drives, golf, other sports, winter sports.
(5) Parks, grounds and landscaping.
(6) Merchandising all by-products, including bottled waters.
(7) Publicity, promotion and advertising.
(8) Research and investigation.
(9) Planning.
(10) Maintenance and construction.

These activities can be carried forward only through cooperation among the various branches of the organi-

zation, with, nevertheless, a careful subdivision of the work and of the responsibility of each of these groups.

(*a*) *Medical.*—The medical staff will establish regulations governing the methods of treatment, will provide for training and instructing attendants and directing their work with patients and will, of course, exercise complete supervision of administering all treatments to patients. This not only will apply to giving of mineral baths, packs, inhalations and other treatments with mineral waters but will also cover the use of adjunct physical therapeutic treatments.

Only in large institutions will it be practicable for the medical department to establish a formal school for attendants. Yet much training can be accomplished by informal methods of teaching in connection with the direction and supervision of the new attendants who have received training and experience either in special schools or at other spas. One very important point in such training is the instruction of the attendant in the recognition of danger signs which may appear with various medical conditions. Such danger signs must be reported immediately to the medical staff or to the patient's physician.

Medical care may be provided in three general ways: First, the direct and complete supervision of the patient's entire program by a physician employed by the institution offers most complete control, with consequent close relationship between the institution and the patient. However, extreme seasonal variations in the number of patients at most health resorts make it difficult to maintain the large year round medical staff which is required.

A second method is through a more general administrative supervision of the patient's program by medical personnel. This plan offers less individual control of each patient but is of course possible of operation with a much smaller medical staff.

The third way of providing medical care of patients at a health resort is the most usual one. The patient places himself under the care of a regularly practicing physician of the vicinity who is experienced in the program of treatments at the resort. This physician prescribes treatment, watches the patient's progress and advises him. This relation is entirely outside the control of the institution, except that most resorts are prepared to give to their patients a list of available experienced physicians.

Patients at private institutions are practically all paying patients, while governmental institutions frequently make considerable provision for charity cases. At Hot Springs, Ark., and at the Saratoga Spa such patients are required to submit proof of inability to meet costs of treatment. In such cases living accommodations during the treatment period are usually provided through charitable organizations, friends of the patient or other sources. This group of patients receives medical direction from physicians of the staff without charge.

Cooperation with the medical profession should provide for complete information to the patient's home physician by correspondence or conference. General dissemination of sound medical information to the profession is accomplished through the publication of explanatory literature and of scientific articles, as well as through lectures before medical organizations. Other important duties of the medical department will be the careful planning of a program of investigation and research as to the use of the natural curative agents available and the collaboration of such research work with the chemical and physical departments, as well as the establishing of a library of reference works or scientific publications on the subject.

(*b*) *Engineering and Construction.*—In establishing and operating a health resort, particularly in widening the scope of its activities, engineering problems of prime importance arise. The engineer must give deep study to the unusual conditions to be met in specifying the design of plant, buildings and equipment for a health resort, and proper construction and installation must be in the hands of competent engineers and architects. Falling as it does between the field of use of a hotel and that of a hospital, care must be taken not to lapse into the error of accepting design and methods for either of these alone as a satisfactory standard. Of no small importance is the layout of parks and grounds with appropriate landscaping, and such design must be integrated into the whole plan, under the general policy set forth by the administrative body.

Conservation and care of sources of mineral water or other natural therapeutic agents should be completely in the hands of the engineering department, with thorough cooperation from the chemical and medical departments as required. Supervision of technical maintenance and physical operation comes within the jurisdiction of this department, as do manufacturing methods if a product is manufactured. The engineering department must offer complete research cooperation with the chemical and medical branches, and the adoption of research results to methods of operation must be a responsibility of the engineer in charge.

(*c*) *Chemical Control.*—A chemical department will arrange for and carry on routine control analyses of the waters and of possible products, without which control neither the medical nor the engineering department can proceed on a firm footing. The chemical department will cooperate with the engineering department in the care and conservation of sources of the water and will provide technical advice on problems of operation and maintenance, particularly in the maintenance of plant and equipment. This department will have a large share in research investigation as laid out in collaboration with the medical director. Such research will obviously strive for one or more of the following objectives:

(1) Information regarding the origin and sources of the mineral waters, or other natural therapeutic agents.

(2) Correct practice in the known uses of the natural resources in treatment of disease.

(3) Search for new and improved therapies using the natural resources.

(*d*) *Accounts.*—The accounting department is responsible for periodic profit and loss statements of operation, furnishes information for control of finances, should have entire charge of and responsibility for handling and reporting receipts and income and should furnish cost accounting in detail for all branches of the business of the resort.

(*e*) *Legal Division.*—The legal department will be perhaps more responsible to the administering body than to the executive and will furnish legal advice and opinions to the administrative group. It will draw or approve all contracts and other legal papers and will handle all court actions of any nature whatsoever or will

advise as to the employment of necessary counsel. This department should provide supervision of legal safeguards of operation, with consultation for the executive head of the resort, including interpretation of federal, state and municipal laws which may apply, and including also advice as to requirements for insurance coverage of all kinds.

(*f*) *Operation and Maintenance.*—Operation and maintenance will cover the innumerable items of physical maintenance and repair of plant, administering of treatments, providing means for entertainment of patients and visitors and manufacture of by-products if they exist. This department will be in charge of personnel, their selection, instruction, direction and supervision, with particular attention to the attitude of the personnel toward patients and visitors. Here is the closest and most continuous relationship with visitors; and courtesy and consideration, tact and honesty must be stressed. This division can be of inestimable value to the resort in its recommendations to the administrative body for future planning of operations or of enlargements.

(*g*) *Public Relations.*—The public relations of a resort may be only a portion of the duties of the owner or general manager or it may blossom forth into a complete department. At any rate its function will include supervision of direct paid advertising in newspapers, periodicals and radio programs, and displays of any sort ranging from small window displays to large exhibits at conventions or fairs. Likewise there will be promotional instruction of the resort personnel in their work with patients and visitors. The writing of pamphlets and articles and the editing of technical publications of the research or technical departments offers a wide field. All such material will be subject to review by the medical staff.

The director of public relations will carry on much of the correspondence, including careful answering of inquiries, circularizing of physicians and keeping in contact with past and potential patients. In all these activities the public relations department will find means of attracting patients to the resort. Organization of entertainment and recreation for patients and visitors is so important that it might well be made a separate branch of the work, requiring tact and skill.

If by-products of any nature are marketed by the health resort for public consumption, a separate sales organization will undoubtedly be set up. However, its advertising and sales material must be subject to the same considerations of accuracy and honesty as are all other spa publications.

IV. OPPORTUNITIES AND RESPONSIBILITIES

Opportunities and responsibilities which will come to every health resort include:

The opportunity for the development of natural therapeutic resources with the responsibility that it be accomplished along scientifically controlled lines.

The opportunity for the alleviation of chronic ailments, with the responsibility for frank accrediting to all factors involved.

The opportunity for the direct care of patients with the responsibility for strict observance of medical and business ethics.

The opportunity to advance public knowledge of the benefits of Spa Therapy with the responsibility for avoiding any savor of "showmanship."

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

AUSTIN E. SMITH, M.D., Secretary.

THE METRIC SYSTEM

Announcement by the Council on Pharmacy and Chemistry[1] that New and Nonofficial Remedies, Useful Drugs, the Epitome of the U. S. Pharmacopeia and National Formulary and Interns' Manual (with the consent of the Council on Medical Education) as well as other Council publications will henceforth give quantities and dosages exclusively in the metric or centimeter-gram-second system marks a step of no little importance in the progress of rational medicine. The necessary conversion tables will of course be printed in each volume.

The traditional system of measures and weights (later codified as the imperial or foot-pound-second system) and the centimeter-gram-second systems afford an entertaining contrast. Each system is based on units of length, mass and time. The traditional measures are ancient in origin and historically have been derived from anatomic structures or articles of common use. The foot was originally the length of any one's foot, regardless of size and style of shoe. This very variable measure prevailed until Edward II (A. D. 1324) decreed that "three barley corns, round and dry, shall make an inch, twelve inches a foot, three feet a yard." In recognition of the need for uniformity, it was decreed that the barley corns must be taken from the center of the ear and placed end to end.

Other units of length were the cubit, or the length of the forearm; this was used in ancient Egyptian, Hebrew and Roman mensuration; the yard, which Henry I is said to have decreed should equal the distance from the point of the kingly nose to the end of the regal thumb: the rod, which was defined[2] as the "combined length of the left feet of sixteen men when lined up 'heel to toe' as they left church on a Sunday morning."

Bulk was first measured by the armful, the handful and the pinch, the latter also being known as the pugil and, according to a footnote in a 1793 edition of Wesley's Primitive Physik, consisting of "as much as you can take between your thumb and two forefingers."

When clearer standardization of bulk measurement came it was based first on cereals (whence we get our present method of estimating weight by grains) and later on coinage, as illustrated by the pound—in England both a weight and a money and established thus in 1266:

"An English penny, called a sterling, round, and without clipping, shall weigh thirty-two wheat corns from the midst of the ear, and twenty pence shall make an ounce, and twelve ounces one pound, and eight pounds do make a gallon of wine, and eight gallons of wine do make a London bushel, which is the eighth part of a quarter."

A standard yard has of course been preserved as a basic measure; however, since the time of Henry VII and Elizabeth, the Imperial Standard Pound is preserved as a standard of mass and there is a standard gallon as a corresponding measure of volume. The unit of time is fortunately the same in the imperial and the metric systems.

In the middle ages nearly all the principal towns or seats of commerce had their own weights and measures, the pound, foot, gallon and so on varying from one town to another. The avoirdupois system was introduced into England from Bayonne about A. D. 1300 and is substantially the Spanish system.[3] The pound avoirdupois is the standard weight of Great Britain. One pound avoirdupois = 16 ounces = 256 drachms (= 7,000 grains troy).

The pound of Troyes (a town in France) in the early part of the fourteenth century was adopted to some extent in other places and in England. Later troy weight lost recognized connection with a locality and was adopted for British coinage in

1. Annual Meeting of the Council on Pharmacy and Chemistry, J. A. M. A. 121:839 (March 13) 1943.
2. The Pit-Mar-ian 6:7-8 (Nov.-Dec.) 1941.
3. The Century Dictionary, Revised and Enlarged Edition, New York, 1914.

1527. It is now used only for weights of gold and silver. One pound troy = 12 ounces = 240 pennyweights = 5,760 grains.

Apothecaries' weight, the system of weights formerly in Great Britain and still in the United States, employed in dispensing drugs, differs only in its subdivisions from troy weight. One pound apothecaries' weight = 12 ounces = 96 drachms = 288 scruples = 5,760 grains.

By the British medical act of 1858 and the act of 1862, the General Council of Medical Education and Registration of the United Kingdom are authorized to issue a "Pharmacopeia" with reference to the weights and measures used in the preparation and dispensing of drugs and so on.[4] The British Pharmacopeia issued by the Council in 1898 made no alteration in the imperial weights and measures required to be used by the Pharmacopeia of 1864. For all pharmaceutical purposes, however, the use of the metric system alone was employed in all paragraphs relating to analysis, whether gravimetric or volumetric. The new British Pharmacopeia employs metric measures of capacity.

Information supplied by Dr. E. Fullerton Cook reveals that in colonial days the English system of weights and measures was largely employed in American medicine, and these naturally found their way into the early U. S. Pharmacopeia, which was modeled after the London Pharmacopeia. The metric system, however, began to gain popularity and at the convention of 1870 its adoption in all formulas of parts by weight was recommended, apparently as a sort of halfway measure. The Revision Committee of 1870 failed to carry out this proposal and explained it in the following statement (See U. S. P. 1870, preface, page xiv):

"In the series of resolutions passed by the Convention for the guidance of the Committee, it was directed 'that measures of capacity be abandoned in the Pharmacopeia, and that the quantities in all formulas be expressed both in weights and in parts of weight.' To execute such directions entails the use of a metrical system not employed in this country or in England, and which would have to be constructed for the purpose. Such a change would involve changed proportions in almost every formula and would produce a corresponding disturbance in many of the doses. Moreover, such directions were not anticipated in any of the revisions handed to the Committee; and to institute such extended experiment as would cover the whole ground of the directions of the Pharmacopeia would entail so much expenditure of time, labor and cost as to render the plan impracticable. This view of the question was unanimously taken by the Committee at a meeting consisting of ten members."

The failure to meet this modern development was severely criticized and led to a movement which changed materially the Pharmacopeia. In the U. S. P. 1880 parts by weight were introduced for formulas, but the metric system was established for all tests and reagents. Each convention since 1880 has specifically directed the inclusion of the metric system in Pharmacopeial formulas and tests. However, when the convention of 1900 directed the introduction of average doses it directed that the metric system be used in expressing doses but that the approximate equivalent in ordinary weights and measures be inserted in parentheses. This is the only use of the apothecary system of weights and measures in the body of the present Pharmacopeia. Not only does the Pharmacopeia give "preference" to the metric system, but the convention of 1940 "instructed" the Committee on Revision to retain the metric system of weights and measures.

The origins of the metric system, in contrast to the traditional or natural system, are relatively modern and completely rational. The plan on which the decimal system of interrelated measures and weights is based was devised in 1783 by the English engineer James Watt, who is declared to have thought this his greatest invention.[5] Watt conferred with Laplace and other eminent French scientists in Paris in 1786. The actual units of the metric system were established by a committee of the French Academy of Sciences acting for the French government. The metric standards were officially adopted in France in 1799.[6]

4. Encyclopedia Britannica, ed. 14, 15: 138, 1937.
5. Drury, A.: The Metric Advance, All-America Standards Council, San Francisco, 1926, p. 12.
6. The Metric versus the English System of Weights and Measures, National Industrial Conference Board, Research Report No. 42, New York, Century Company, October 1921.

The fundamental unit of the metric system is the unit of length or meter; the unit of volume or liter is a cube of 1/10 meter side; the gram, or unit of weight, is 1/1,000 the weight of a liter of water at 4 C., its temperature of greatest density.

From the meter and gram are derived, by merely moving the decimal place, the scientific measures of length required from geographic distances to the units of cytology (μ, microns) and those used in the measurements of atomic spacing and radiation (angstrom units) and all metric units of mass and volume. The scientific units of velocity, acceleration, force, energy, work and power are simply and logically derived from the fundamental metric units, as indeed the complex units of all the pure and applied sciences may, with the aid of certain conversion constants, be derived step by step without break in logic.

The metric system was in 1937[7] obligatory in Argentina, Austria, Hungary, Belgium, Brazil, Chile, France, Germany, Greece, Italy, Mexico, Netherlands, Norway, Peru, Portugal, Rumania, Spain, Sweden, Switzerland and Yugoslavia. Its use is legalized in Egypt, Britain, Japan, Russia, Turkey and the United States. In 1875 there was constituted at Paris the International Bureau of Weights and Measures, which is managed by an international committee. The object of the bureau is to make and provide prototypes of the meter and kilogram for the various subscribing countries.

A search of the older issues of THE JOURNAL and the still earlier Transactions of the American Medical Association will reveal that there was some discussion of the use of the metric system prior to 1878, but in that year a resolution was introduced and passed by the American Medical Association which recognized the value of the metric system and ". . . recommends to all physicians the use of the same in their practice and in their writings and teachings." The next year a report by Dr. Seguin of New York closed with a resolution which was unanimously adopted, as follows: "That the American Medical Association adopts the International Metric System, and will use it in its transactions, . . . papers, . . . requests the medical boards of the hospitals and dispensaries to adopt the Metric System. . . ." In 1880 the Metric Executive Committee of the American Medical Association, after reviewing the situation, "Recommends the teaching and practice of the metric system in medical colleges, clinics, dispensaries, etc. Charges its Executive Metric Committee with the duty to report annually on the above institutions which teach, and those who do not teach the metric system. Authorizes said committee to enter into communication with the Metric Committee of the British Medical Association, in order to concert such plans as may render the use of the metric system simultaneous and uniform in both countries."

THE JOURNAL for 1890 carries a letter from a committee of the American Association for the Advancement of Science appointed in 1889 to promote the use of the metric system. This letter states in part: "One of the principal reasons why the metric system has not yet been adopted in this country by professional men is the indifference shown by our professional schools. . . . As the metric system is legal throughout the United States, any physician is entitled to present a metric prescription to the druggist. All boards of examiners in medicine and pharmacy, whether state or collegiate, are justified by law to exact, and should demand from every candidate for graduation or for license a knowledge of the metric system." It was also recommended ". . . that schools of medicine cease to give instruction in the apothecaries' system of weights and measures, for which there is no longer any reason. . . ." Other resolutions and discussions have appeared frequently in THE JOURNAL.

A member of the headquarters staff of the American Medical Association, out of curiosity, called four leading pharmacies in the Chicago loop to ask what percentage of their prescriptions were written in the metric system. The results were as follows:

(*a*) Seventy-five per cent in metric; more and more are using the metric system.

(*b*) Forty per cent using the metric system. Some physicians use both metric and apothecaries' in the same prescription.

(*c*) Twenty-five per cent using metric. Not increasing.

7. The Encyclopedia Britannica, ed. 14, 15: 362-363, 1937.

(*d*) Seventy per cent using metric. Number increasing. The younger men are more inclined to use metric.

It would seem that some small progress has been made. Further progress can be developed by employing the metric system whenever possible, especially in teaching centers and during the preparation of papers for publication, and by the adoption of this system of dosage by drug manufacturers. Apparently the use of this system would not be objected to by official bodies, regulatory or otherwise.

The universal use of the metric system in scientific work, its adoption for general purposes in many countries and its practical simplicity have always been sound reasons for the use of the metric system in medicine. The immediate and practical stimulus to the Council in deciding to adopt the metric system exclusively in its publications has been the occurrence of serious accidents in dosage due to confusion between the two systems. The Council particularly would like the cooperation of teachers and students in our medical schools and of the firms making pharmaceuticals and biologicals in using the metric system. It would like to invite its engineering colleagues to consider an equivalent step. The universal adoption of the metric system would be a manifestation of rationality and of interprofessional and international cooperation of high practical utility.

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

AUSTIN E. SMITH, M.D., Secretary.

DIODOQUIN.—5,7-Diodo-8-hydroxyquinoline, $C_9H_5N.OH.I_2$.—A compound resulting from the introduction of two atoms of iodine into 8-hydroxyquinoline.

Actions and Uses.—Diodoquin is proposed as an antiprotozoan agent for use in amebic dysentery and in the treatment of Trichomonas hominis (intestinalis) infections.

Dosage.—Adults—seven to ten tablets a day for fifteen to twenty days.

Tests and Standards.—

Diodoquin occurs as a yellowish brown, practically odorless powder. It is almost insoluble in water, sparingly soluble in alcohol, ether and acetone, soluble in hot pyridine and in hot chloroform. Diodoquin melts between 200 and 215 C. with extensive decomposition.

Warm a few crystals of diodoquin with 1 cc. of concentrated sulfuric acid: vapors of iodine are evolved. Heat 0.5 Gm. of diodoquin mixed with 5 Gm. of anhydrous sodium carbonate in a deep crucible; cool; extract the mixture in 10 cc. of water; acidify with diluted nitric acid. Filter and add 13 cc. of tenth-normal silver nitrate solution to the filtrate. Shake to coagulate the precipitate and filter. Add 1 cc. of tenth-normal silver nitrate solution to the filtrate, shake and filter through a fresh filter paper. Wash the precipitate on the filter: a yellow color is observed (*distinction from vioform, which gives a white precipitate*).

Dry 1 Gm. of diodoquin over phosphorus pentoxide for twenty-four hours: the loss in weight is less than 0.1 per cent.

Incinerate about 1 Gm. of diodoquin: the ash is not over 0.5 per cent.

Mix about 0.15 Gm. of diodoquin, accurately weighed, in a nickel crucible with 5 Gm. of anhydrous potassium carbonate (or sodium carbonate). Mix thoroughly with a dry stirring rod, settle the mixture by tapping the crucible, overlay with 5 Gm. of potassium carbonate (or sodium carbonate) and ignite at about 600 C. for from three to five minutes. Cool, transfer the crucible to a 500 cc. wide mouth conical flask and extract with about 20 cc. of distilled water. Acidify the solution carefully, dropwise, with five normal hydrochloric acid (about 30 cc.). Filter the solution quantitatively into a 250 cc. glass stoppered flask, using two 20 cc. portions of water to rinse the flask and filter paper. The volume at this point should be about 100 cc. Add a cooled mixture of 35 cc. of hydrochloric acid, 35 cc. of distilled water, and add 10 cc. of purified chloroform. Titrate with tenth-normal potassium iodate to the disappearance of pink color in the chloroform layer (add iodate solution dropwise and shake vigorously near the endpoint). One cc. of tenth-normal potassium iodate solution is equivalent to 0.00423 Gm. of iodine. Diodoquin contains not less than 60.5 per cent nor more than 64.0 per cent of iodine.

G. D. SEARLE & CO., CHICAGO

Tablets Diodoquin: 0.21 Gm.

U. S. Trademark No. 336,484.

Council on Foods and Nutrition

AT THE REQUEST OF THE COUNCIL, THE BOARD OF TRUSTEES APPROVED A SMALL GRANT FOR CONDUCTING A STUDY OF THE NUTRITIVE VALUE OF PREPARED CEREAL FOODS AND THE GRAINS FROM WHICH THEY ARE MADE. THE FOLLOWING REPORT REPRESENTS A PRELIMINARY ACCOUNT OF THE RESULTS THAT HAVE BEEN OBTAINED IN THE ANALYSIS OF A NUMBER OF PRODUCTS. IN AUTHORIZING PUBLICATION OF THIS REPORT THE COUNCIL DESIRES TO EXPRESS ITS APPRECIATION OF THE COOPERATION OF DR. C. A. ELVEHJEM AND MR. GEORGE KITZES.

GEORGE K. ANDERSON, M.D., Secretary.

VITAMIN CONTENT OF PREPARED CEREAL FOODS

GEORGE KITZES, M.S.
AND
C. A. ELVEHJEM, PH.D.
MADISON, WIS.

Grain products have always been an important component of the American diet. Flour and bread have been the subject of much discussion, but comparatively little attention has been given to other prepared cereal foods. Many of the prepared cereal foods now on the market have been processed in order to improve flavor and palatability with the consequence that some nutritional value is lost. Some of the manufacturers have undertaken the restoration of the vitamin content to that of the whole grain cereals from which they are made. Since the individual whole grains vary in their vitamin content, and since the vitamin content of enriched cereals is generally labeled in terms of the minimum daily human requirement, it is often difficult for the physician to compare one cereal product with another. As an aid to persons interested in the nutritive value of these products and as a guide to manufacturers, the Council on Foods and Nutrition has attempted to obtain some factual information about the amounts of thiamine, riboflavin and niacin in readily obtainable products.

For the purposes of this preliminary report no attempt has been made to obtain a complete assortment of all the available products. The products which have been examined were purchased at local markets in the spring and early summer of 1943. It is important to point out that only a limited number of analyses have been made on each product, and hence the values presented may not be typical and, as the investigation proceeds, certain revisions may have to be made. It is hoped, however, that the figures presented in the table for thiamine, riboflavin and niacin may be of some value to those dealing with this problem. The thiamine was determined by the thiochrome method [1] and the riboflavin and niacin by microbiologic procedures.[2] In order to compare the results for the prepared products with the vitamin content of the original whole grains, values for the latter compiled by the Food and Nutrition Board of the National Research Council are included. Those cereals which have been enriched either with natural material or with the synthetic vitamins have been indicated in the table.

From the Department of Biochemistry, College of Agriculture, University of Wisconsin.

Published with the approval of the director of the Wisconsin Agricultural Experiment Station, University of Wisconsin, Madison.

1. Hennessy, D.: The Determination of Thiamine in Cereal Products, Cereal Chemist Bull. **2**, 1942.

2. Strong, F. M., and Carpenter, L. E.: Preparation of Samples for the Microbiological Determination of Riboflavin, Indust. & Engin. Chem. (Anal.) **14**: 909, 1942. Krehl, W. A.; Strong, F. M., and Elvehjem, C. A.: Determination of Nicotinic Acid, ibid. **15**: 471, 1943.

Vitamin Content of Whole Grains

(Data Compiled by the Food and Nutrition Board, National Research Council)

Product	Thiamine	Riboflavin	Niacin
	(Expressed as Mg. per 100 Gm.)		
Wheat, whole	0.44 to 0.65	0.09 to 0.20	5.4 to 8.6
Corn, whole	0.37 to 0.58	0.08 to 0.24	1.7 to 2.7
Oats	0.66 to 0.88	0.12 to 0.17	0.88 to 1.76
Rice	0.33 to 0.56	0.06 to 0.25	4.4 to 6.6

Vitamin Content of Certain Prepared Cereal Foods

Products Derived Largely from Wheat	Manufacturer			
All-Bran	Kellogg Company	0.52	0.48	17.5
Post's Bran Flakes *	General Foods Corporation	0.53*	0.29	8.5
Breakfast Wheat	H. J. Heinz Company	0.65	0.06	2.9
Coco-Wheats *	Little Crow Milling Company	0.48*	0.07	2.3*
Cream of Wheat	Cream of Wheat Corporation	0.07	0.05	0.77
Cream of Wheat *	Cream of Wheat Corporation	0.41*	0.08	1.6*
Farina	The Quaker Oats Company	0.08	0.06	0.82
Farina *	Pillsbury Flour Mills Company	0.37*	0.05	2.1*
Grape-Nut Flakes *	General Foods Corporation	0.52*	0.20	4.9
Grape-Nut Wheat Meal *	General Foods Corporation	1.69*	0.12	5.0
Post Grape Nuts *	General Foods Corporation	0.84*	0.20	4.0
Krumbles	Kellogg Company	0.07	0.21	4.0
Krusty Bran †	Battle Creek Food Company	0.46	0.28	14.3
Maltex Cereal	The Maltex Company, Inc.	0.32	0.13	4.6
Malt-O-Meal	Campbell Cereal Company	0.07	0.06	1.4
Monarch Food of Wheat	Reid, Murdoch and Company	0.05	0.05	0.91
Muffets	The Quaker Oats Company	0.24	0.10	4.0
Pep *	Kellogg Company	1.50*	0.25	6.5
Puffed Wheat Sparkies *	The Quaker Oats Company	0.54*	0.22	7.9*
Ralston Instant Whole Wheat Cereal †	Ralston Purina Company	0.43	0.16	5.5
Ralston Whole Wheat Cereal †	Ralston Purina Company	0.52	0.14	5.1
Rolled Wheat (Pettijohn's)	The Quaker Oats Company	0.31	0.13	3.6
Shredded Ralston	Ralston Purina Company	0.16	0.12	4.5
Shredded Wheat	Kellogg Company	0.23	0.19	4.5
Shredded Wheat	National Biscuit Company	0.24	0.15	4.3
Shreddies	National Biscuit Company	0.20	0.11	4.3
Sturdiwheat †	Sturdiwheat Company	0.56	0.17	3.8
Toasted Wheat	Doughboy Mills Company	....	0.13	6.2
Wheatena	Wheatena Corporation	0.13	0.15	4.0
Wheat Flakes	Miller Cereal Mills	0.08	0.12	4.2
Wheaties *	General Mills, Inc.	0.60*	0.22*	4.1
Wheat Krispies	Kellogg Company	0.13	0.18	4.1
Wheat Puffs	Thuringer Macaroni Company	....	0.11	6.3
Wheatsworth Cereal	National Biscuit Company	0.46	0.12	5.0
Products Derived Largely from Corn				
Corn Flakes	Kellogg Company	0.45	0.07	1.8
Corn Flakes	General Foods Corporation	0.40	0.10	1.2
Corn Meal, yellow	The Quaker Oats Company	0.10	0.03	0.90
Kix †	General Mills, Inc.	0.44*	0.20*	2.1
Products Derived Largely from Oats				
Cheerioats *	General Mills, Inc.	0.80*	0.25*	1.8*
Instant Oatmeal *	Harold H. Clapp, Inc.	1.08*	0.32	2.0
Quaker Oatlets *	The Quaker Oats Company	0.90*	0.11	0.60
Quick Quaker Oats	The Quaker Oats Company	0.56	0.14	1.0
Ralston Instant Oatmeal	Ralston Purina Company	0.63	0.14	1.0
Strained Oatmeal *	Gerber Products Company	1.50*	0.29	2.2
Products Derived Largely from Rice				
Puffed Rice Sparkies *	The Quaker Oats Company	1.56*	0.07	1.2
Rice Krispies	Kellogg Company	0.40	0.07	8.0
Rice Krispies	H. J. Heinz Company	0.15	0.18	4.0
Whiffs-O-Rice	Poph-Itt Cereal Company	0.01	0.01	0.82
Products Not Otherwise Classified				
Bran and Pig †	Battle Creek Food Company	0.44	0.27	12.5
Cereal Food *	H. J. Heinz Company	1.27*	0.34	2.5
Cereal Food	Gerber Products Company	1.50	0.37	5.9
Cereal Food *	Harold H. Clapp, Inc.	1.80*	0.36	5.4
Crackels	The Quaker Oats Company	0.05	0.05	1.0
Little Kernels	The Quaker Oats Company	0.08	0.05	0.85
Pablum	Mead Johnson and Company	1.20	0.35	2.6
Wheat Germ	Elam Mills, Inc.	1.86	0.68	6.2
"Zo" (ready to eat)	Battle Creek Food Company	0.29	0.17	4.3

* Enriched with synthetic vitamins, or vitamin concentrates. † Enriched with wheat germ.

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SATURDAY, DECEMBER 4, 1943

THE MODES OF SPREAD OF INFANTILE PARALYSIS

At the conference of the Federation of Sewage Works Associations in Chicago in October Maxcy and Howe[1] reviewed the significance of the occasional presence in sewage of the virus of infantile paralysis. The demonstration of the virus in the stools of patients and of carriers has been supplemented by the finding of the virus several times in urban sewage in periods of maximal incidence of the disease. This observation at once raised the question whether the virus in sewage can make its way into water supplies for drinking and for swimming pools and thus perhaps spread the disease. Maxcy and Howe point out that the virus can live only a short time in sewage so far as known now and that there is no likelihood of its surviving the passage through water purification plants. There is no evidence at hand that the virus can live on or multiply in water. Maxcy and Howe stressed the fact that infantile paralysis does not behave like a water borne disease. It has not been "correlated with poor water supplies nor have explosive outbreaks of widely scattered cases appeared in cities with municipal water systems," which would be expected to occur if virulent virus was disseminated in the water mains. Cities with water supplies remote from human abodes suffer from infantile paralysis as frequently as cities whose water comes from sewage polluted sources. Indeed, the epidemic spread of the disease has been quite independent of common water supplies. There is no record of any explosive outbreak of infantile paralysis attributable "to simultaneous exposure of a group of people to a common source of water." Consequently it seems safe to conclude that the presence under certain circumstances of the virus of infantile paralysis in sewage is without significance as far as the general spread of the disease is concerned.

1. Maxcy, K. F., and Howe, H. A.: The Significance of the Finding of the Virus of Infantile Paralysis in Sewage: A Review, Sewage Works Journal, to be published.

Maxcy and Howe consider also the transmission of infantile paralysis by flies and by personal contact. The virus has been demonstrated in flies in epidemic areas, but flies are not invariably associated with the disease and the disease would not "attack children preponderantly, as is the case, were it transmitted primarily by the fly or any other insect." How about the patient himself and the carrier as sources of infectious virus? In both the virus is present in the stools, the secretions and the walls of the pharynx; hence it can pass to other persons by means of fecal contamination of the hands, food, milk and other objects as well as by droplets of pharyngeal mucus.

Present knowledge points to contact infection as the most important means of spreading infantile paralysis. This being the case, everything in human power must be done to prevent contact infection. Unquestionably there is need now for closer isolation than has been carried out in the past. The discovery of practical methods for detection of the virus and for determination of infectiousness on the part of the patient and of potential carriers is a task for the future, not to mention the possibility of finding means to hasten the destruction of the virus in the human body.

HYPOTHERMIA IN EXPERIMENTAL INFECTIONS

Prolonged artificial reduction of body temperature to levels 10 to 15 degrees below normal was suggested as a method of treatment for incurable cancer.[1] This suggestion renewed clinical interest in the physiologic effects of hypothermia, particularly in its effects on antimicrobic resistance. The earlier tests of the effects of chilling on natural and acquired immunity[2] are inconclusive because of the relatively small reduction of body temperature then studied and the relatively short duration of the hypothermia. Hardy and his colleagues[3] of Cornell University Medical College have therefore tried to produce hypothermia in laboratory animals of the same severity and duration as that suggested in cancer therapy.

By giving rabbits a massive intraperitoneal dose of sodium pentobarbital and then placing them in a special refrigerator the rectal temperature could be lowered to 88 to 91 F. for as long as ninety-six hours without lethal effects. Guinea pigs would tolerate the same degree of hypothermia for periods as long as twenty-four hours. Two twenty-four hour periods of hypothermia per week were well borne by these animals.

Applying this technic, Duerschner and her colleagues[4] studied the effect of biweekly twenty-four hour

1. Smith, L. W., and Fay, Temple: Temporary Factors in Cancer and Embryonal Cell Growth, J. A. M. A. 113:653 (Aug. 19) 1939.
2. Foord, A. G.: J. Infect. Dis. 23:159 (Aug.) 1918.
3. Hardy, James D.; Duerschner, Dorothy Rhoades, and Muschenheim, Carl: Hypothermia in Experimental Infections: I. Preliminary Observations on Tolerance of Guinea Pigs and Rabbits to Induced Hypothermia, J. Infect. Dis. 72:179 (May-June) 1943.
4. Duerschner, Dorothy R.; Muschenheim, Carl, and Hardy, J. D.: Hypothermia in Experimental Infections: II. The Effect of Hypothermia on Tuberculin Sensitivity in Guinea Pigs, ibid., p. 183.

periods of hypothermia on the course of experimental tuberculosis in guinea pigs. Sixty guinea pigs weighing 300 to 500 Gm. were infected subcutaneously with virulent human tubercle bacilli. Beginning the day after inoculation, a group of 20 of the infected guinea pigs were subjected twice weekly to a twenty-four hour period of hypothermia for a period of six weeks. Twenty drug controls were given equivalent amounts of sodium pentobarbital but were not subjected to chilling. The remaining 20 animals were maintained as untreated normal controls. At the conclusion of six weeks all surviving animals were maintained under standard conditions until they succumbed from tuberculosis.

Significant differences were not observed in the survival time in the three groups or in the amount and distribution of the tuberculous lesions in the various organs as found at necropsy. The development of tuberculin sensitivity of the skin, however, differed in the hypothermic groups. Practically all animals of the two control groups developed 4 plus skin sensitivity to routine tuberculin tests on or before the fifth week. In the hypothermic group little or no skin sensitivity was noted at this time. The difference was equally pronounced at the end of seven weeks. A month or more later, however, after the hypothermia had been discontinued, the tuberculin reactions became equally intense in all three groups. Repeated biweekly reduction of body temperature to levels from 7 to 14 degrees F. below normal of twenty-four hour duration over a period of six weeks thus did not have either beneficial or injurious effects on experimental tuberculosis in guinea pigs except in delaying the development of skin allergy.

Muschenheim and his associates[5] have applied the same technic to a study of the effects of continuous hypothermia (ninety-six hours) on experimental pneumococcic infections in rabbits. Their most striking results were obtained with rabbits inoculated intradermally with relatively avirulent type III pneumococcus. This strain is nonlethal under ordinary conditions even in high dosage. The induced hypothermia inhibited or reduced the local dermal inflammatory reaction but usually resulted in an overwhelming bacteremia and death. It thus changed a normally nonlethal to a lethal pneumococcic infection. Local chilling of the skin at the site of the inoculation also inhibited the local dermal inflammatory reaction but did not cause fatal bacteremia. The change of a nonlethal to a lethal pneumococcic infection was seen also in intravenously injected rabbits. There was no depression of leukocyte count and no evidence of impaired phagocytic function to account for these results. Alterations in circulating antibodies have not yet been reported.

5. Muschenheim, Carl; Duerschner, Dorothy R.; Hardy, J. D., and Stoll, Alice M.: Hypothermia in Experimental Infections: III. The Effect of Hypothermia on Resistance to Experimental Pneumococcus Infection, J. Infect. Dis. 73: 187 (May-June) 1943.

Current Comment

THE METRIC SYSTEM

Attention is called to the announcement elsewhere in this issue (p. 900) that future editions of New and Nonofficial Remedies, Useful Drugs, the Epitome of the U. S. Pharmacopeia and National Formulary and Interns' Manual (with the consent of the Council on Medical Education and Hospitals) as well as other Council publications, will give quantities and dosages exclusively in the metric system. This step is in harmony with the growing and current practice of prescribing vitamins, hormones and sulfonamide preparations. The Council's concise historical presentation of the units of measure formerly in common use emphasizes the value of adopting a uniform method of presenting quantities and dosages. While daily living may have been governed for many years by grains and barley corns, the kingly nose and regal thumb, and the combined length of the left feet of "sixteen men who lined up heel to toe as they left church on a Sunday morning," workers in the exact sciences appreciate the value of the simplicity, convenience and precision of the metric system. Universal adoption of this system will be a manifestation of rationality and of interprofessional and international cooperation of great practical utility.

NEUROPSYCHIATRY IN THE ARMED FORCES

A soldier suffering from what would ordinarily be called a nervous breakdown, a condition classified as a neuropsychiatric disorder, was punished quite unnecessarily by a general. This incident serves to focus attention again on the exceeding importance of proper organization of neuropsychiatry in the medical services so that the most possible can be done to prevent situations of this type in the future. With the beginning of the Selective Service examinations the importance of preliminary neuropsychiatric study became clear. Just recently the Selective Service Administration has improved its technic for this purpose. Originally it was contemplated that great numbers of neuropsychiatrists would be associated with the examinations of men for military service especially on the induction boards and that sufficient time would be allowed for such study. The speed of recruitment and the lack of sufficient personnel, as well as the failure to develop dependable technics, combined to prevent the type of study that needs to be made if any considerable number of potential cases is to be eliminated from admission to the service. Up to April 1943 almost half a million men had been rejected for psychiatric reasons. About one third of all casualties now being returned from overseas are neuropsychiatric. The strain of this war affects leaders, with the added stress of leadership, even more than it does the men in subordinate rank. Already it is clear that constant attendance by qualified neuropsychiatrists may serve to detect potential breakdown among aviators and to restore men in such condition to active service

far more quickly than would otherwise be the case. The death of Col. Roy Halloran deprives the division of neuropsychiatry of the Medical Department of the Army of a distinguished leader who was well on the way to the development of adequate personnel and improved services. A successor has not yet been appointed. Since neuropsychiatric breakdown now constitutes a leading cause of disability, resulting in the loss of services of tremendous numbers of men both in the Army and in the Navy, the Secretaries of War and of Navy might well consider whether neuropsychiatry should be a major division in the organization of the administration of the Medical Departments of the Army, the Navy and the Air Forces.

THE CHILD WITH THE CLEFT PALATE

The Department of Speech and the Institute for Human Adjustment of the University of Michigan has issued a booklet for parents on the subject of cleft palate. The aim of the booklet is to aid parents in acquiring an accurate and sensible understanding of the problems involved and to guide them in solving these problems. The nature of the anomaly is explained and a correct attitude of the parents toward the child and toward the anomaly is suggested. The first preventive measure is to feed the baby with the bottle and nipple so that he can have exercise in sucking and swallowing. The lip defect is to be repaired preferably during the first month by a surgeon who specializes in oral surgery. As soon as the baby reaches the age at which children usually start to chew, he should be taught to chew on solid food. These chewing activities are the muscle movements out of which speech develops. A baby with cleft palate should be encouraged to coo and to babble. The operation on the palate should be performed sometimes between the eighteenth and the twenty-fourth month. When the palate has been repaired, the first problem is to train the soft palate to function. The best plan to follow at this time is for the parents to consult a speech clinic. The booklet contains a number of practical suggestions for the parents, with illustrations. The contents of the brief booklet are well calculated to create a hopeful attitude in parents and to indicate the program which, if followed, will go a long way toward alleviating the drawbacks of the anomaly.

NEWSPAPER ADVERTISING OF PROPRIETARY MEDICINES

The better newspapers in this country for years have attempted to exclude the more blatant advertisements of proprietary remedies. A few—too few—have even banned advertising of this class altogether. In Britain, where the situation with regard to extravagant claims has been generally much worse than here, a long step forward has just been taken. As told elsewhere in this issue (p. 920), London newspapers, through their trade association, voluntarily have adopted regulations which should greatly improve the standard of control over such advertising claims. In this country too the time seems ripe for more positive voluntary action by publishers to avoid the danger of control from above by decree, as in Argentina (p. 921), where almost complete government control of drugs and drug advertising has been established.

CONGENITAL BILATERAL ANOPHTHALMOS

Genuine anophthalmos as distinguished from an extreme degree of microphthalmos is rare. From the point of view of embryologic development three types may be distinguished: (1) that due to failure of the optic pit to deepen and to form an outgrowth from the forebrain, (2) that due to complete suppression or an abnormality of the whole of the forebrain and (3) that due to degeneration of an optic vesicle that has formed and its later disappearance. Experimental studies and clinical observations suggest that this maldevelopment occurs as a result of some unfavorable environmental change early in pregnancy and is not of germinal origin. Hare[1] reports 2 instances of congenital bilateral anophthalmos. One of the 2 boys thus afflicted was fitted with prostheses. Hare points out that a child whose appearance is improved by artificial eyes is more acceptable to his parents, relatives and future associates than is one who is disfigured. This, in turn, tends to diminish the emotional trauma to his parents and makes the patient better equipped emotionally to face life. The histories of his 2 little patients also demonstrate the need of placing a child with bilateral anophthalmos under the care of a trained worker.

ETIOLOGIC RESEARCH ON REGIONAL ENTERITIS

Morphologically regional enteritis is an infectious granulomatous process. Heretofore all efforts to discover a causative agent have failed. Staining and cultural methods, animal experiments and immunologic tests have yielded uniformly negative results. With the increase in the knowledge and understanding of venereal lymphogranuloma, which may invade rectal and other abdominal structures, the question has arisen whether regional enteritis may not be caused by the lymphogranulomatous virus, but so far the Frei intracutaneous tests of patients with regional enteritis have not been positive.[1] Rodaniche, Kirsner and Palmer[2] failed also in neutralization tests of the lymphogranulomatous virus with the serum of enteritis patients and in attempts to isolate the virus from resected intestinal segments and mesenteric lymph nodes in regional enteritis. It appears that regional enteritis as ordinarily understood is not caused by the virus of lymphogranuloma. It is of interest that in the reports of these and other cases of regional enteritis there is no mention of any history of typical clinical venereal lymphogranuloma. Regional enteritis shares with Hodgkin's disease the distinction of successfully resisting the search for a specific causative agent.

1. Hare, Robert: Congenital Bilateral Anophthalmos, Arch. Ophth. **30**: 320 (Sept.) 1943.

1. Koster, Harry; Kasman, I. P., and Scheinfeld, William: Regional Ileitis, Arch. Surg. **29**: 789 (May) 1935. Stafford, E. S.: Regional Ileitis and Ulcerative Colitis, Bull. Johns Hopkins Hosp. **61**: 399 (April) 1938. Rodaniche, Kirsner and Palmer,[2]

2. Rodaniche, Enid C.; Kirsner, J. B., and Palmer, W. L.: The Relationship Between Lymphogranuloma Venereum and Regional Enteritis: An Etiologic Study of 4 Cases with Negative Results, Gastroenterology **1**: 687 (July) 1943.

MEDICINE AND THE WAR

In this section of The Journal each week will appear official notices by the Committee on War Participation of the American Medical Association, announcements by the Surgeons General of the Army, Navy and Public Health Service, and other governmental agencies dealing with medicine and the war, and such other information and announcements as will be useful to the medical profession.

ARMY

AVIATION MEDICAL EXAMINERS

Graduation exercises were held on October 27 for aviation medical examiners following the course on aviation medicine, which is now given in its entirety at the School of Aviation Medicine, Randolph Field, Texas. This is the first class to complete this changed program, which began on August 26. The list of students graduating follows:

ALABAMA

Luther L. Hill, Major, Montgomery.
James F. Trucks, 1st Lieut., Birmingham.

ARIZONA

Carlos C. Craig, Captain, Phoenix.
Robert M. McLennan, 1st Lieut., Phoenix.

ARKANSAS

Jones W. Lamb, Captain, Paragould.
Waldo A. Regnier, Captain, Crossett.
Euclid M. Smith, Major, Hot Springs National Park.

CALIFORNIA

Robert T. Gardner Jr., 1st. Lieut., Chula Vista.
Ralph G. Gladen, Captain, Patton.
George E. Hall, Captain, Los Angeles.
Maurice J. Hollien, Captain, Eureka.
Clinton B. H. Hollister, Captain, Santa Barbara.
Cecil C. Hunnicutt, Captain, Montebello.
George Q. Lee, 1st Lieut., Oakland.
Grant V. Lund, Captain, Glendale.
Douglas F. McDowell, 1st Lieut., Santa Barbara.
Wallace B. Parkinson, Captain, Porterville.
Delbert F. Rey, 1st Lieut., Glendale.
Emmett L. Schield, Major, Pasadena.
Hume A. Thomason, 1st Lieut., Santa Monica.
Frank Elwood Tufts, Major, Sacramento.
H. Clyde Washburn, 1st Lieut., El Monte.
Richard F. Webb, Captain, Pasadena.
Thomas S. Whitelock, Captain, San Diego.
Richard A. Young, Major, Oakland.

COLORADO

Harry A. Alexander, Major, Boulder.

CONNECTICUT

Harold A. Bergendahl, Captain, Taftville.
John H. Gilbert, 1st Lieut., Stamford.

DISTRICT OF COLUMBIA

Clifton D. Howe, Captain, Washington.
Francis L. Zinni, 1st Lieut., Washington.

FLORIDA

Noel C. Mellen, 1st Lieut., Pensacola.
Jack O. W. Rash, Captain, Miami.

GEORGIA

Harry M. Kandel, Major, Savannah.
Robert D. McKenzie, Captain, Albany.
John T. Norvell Jr., 1st Lieut., Augusta.
C. James Roper, 1st Lieut., Jasper.

ILLINOIS

Maurice Blinski, 1st Lieut., Chicago.
Clarence H. Boswell, Lieut. Col., Rockford.
Charles G. Freundlich, 1st Lieut., Chicago.
Carl N. Graf, Captain, Chicago.
Mervin W. Greenberg, 1st Lieut., Chicago.
Alexander J. Jones, Captain, Springfield.
Francis H. Ketterer, Major, Breese.
Robert J. McKeever, 1st Lieut., Chicago.
Arnold H. Maloney Jr., 1st Lieut., Stockton.
John R. Peffer, 1st Lieut., Chicago.
Carl M. Pohl Jr., 1st Lieut., Chicago.
Lewis R. Pummer, 1st Lieut., Chicago.
Morton H. Rose, 1st Lieut., Chicago.
Michael Schubert, 1st Lieut., Toluca
William F. Seifert, Captain, Rockford.
Burton J. Schoroff, 1st Lieut., Chicago.
Roger A. VanAtta, 1st Lieut., Chicago.
Robert E. Williams, Major, Chicago.

INDIANA

Alfred J. Dainko, Captain, East Chicago.
Dillon D. Geiger, Major, Bloomington.
George W. Herrold, Captain, La Fayette.
Loren H. Martin, Captain, Indianapolis.
Robert B. Smallwood, Captain, Bedford.
Ira C. Whitehead, 1st Lieut., Terre Haute.

IOWA

Jerome C. Burke, 1st Lieut., Clinton.
Edwin A. Crowell Jr., Captain, Iowa City
Francis C. Dunn, Captain, Cedar Rapids.
Martin J. Ryan, Captain, Sioux City.

KANSAS

Robert C. Anderson, 1st Lieut., Topeka.
Carl T. Buehler Jr., 1st Lieut., Halstead.
Paul E. Craig, Captain, Coffeyville.
Oliver L. Martin, 1st Lieut., Baxter Springs.
George E. Stafford, Captain, Salina.
Ralph M. Wyatt, 1st Lieut., Hiawatha.

KENTUCKY

Richard W. Oliver, Captain, Louisville.
Ernest C. Strode, Captain, Louisville.

LOUISIANA

Frank H. Davis, Captain, Lafayette.

MAINE

Allan J. Stinchfield, Captain, Skowhegan.

MARYLAND

William K. Allen, 1st Lieut., Baltimore.
Marshall P. Byerly, Captain, Baltimore.
Emmett L. Jones Jr., Major, Cumberland.
William H. Morrison, Captain, Baltimore.

MASSACHUSETTS

Frank L. Armstrong, 1st Lieut., Boston.
Cornelius E. Hagen Jr., Captain, Fall River.
Nelson Newmark, Captain, Springfield.
Cyril P. Rouston, Captain, North Adams.
Carl A. Weiss, Captain, Lawrence.

MICHIGAN

David W. Davis, 1st Lieut., Pontiac.
Myron Fink, Captain, Ann Arbor.
Wilfred S. Ley, 1st Lieut., Lansing.
William S. Lovas, 1st Lieut., Detroit.
John R. Lukas, Major, Dearborn.
Frederick P. Maibauer, Captain, Wyandotte.
Donald B. Morrison, Captain, Tekonsha.
David G. Morton, Captain, Detroit.

MINNESOTA

Fabian J. McCaffrey, 1st Lieut., Minneapolis.
Horace D. McGee, 1st Lieut., St. Paul.
Mellvin E. Lenander, Captain, St. Peter.
Theodore W. Stransky, Captain, Owatonna.
William F. Vaudreuil, 1st Lieut., Duluth.

MISSISSIPPI

William O. Biggs, Captain, Ouyka.
Santo T. Coppola, Captain, Jackson.

MISSOURI

Alfred J. Cone, Major, St. Louis.
Joseph H. Delaney, Captain, Columbia.
George E. Moore, Major, Fulton.
Darwin W. Neuhauer, Captain, St. Louis.

NEBRASKA

Albert E. Harrington, Captain, Hastings.
Reynolds J. O'Donnell, Captain, Columbus.

NEW JERSEY

Charles I. Binder, Captain, Newark.
Samuel Edelson, Captain, Neptune.
Ferdinand K. Engelbert, Captain, Trenton.
John J. Hanley, Captain, Newark.
Stuart Z. Hawkes, Major, Newark.
Charles Lipshutz, Captain, Bayonne.
Raymond S. Megibow, 1st Lieut., West New York.
Ralph L. Moore, 1st Lieut., Woodbury.
Peter W. Ross, Captain, Passaic.
Josiah K. Wallis, 1st Lieut., Princeton.

NEW MEXICO

Robert H. Greeley, 1st Lieut., Deming.
Carroll L. Womack, Major, Alamogordo.

NEW YORK

Willard F. Ande, 1st Lieut., Brooklyn.
Melvyn Berlind, Major, Brooklyn.
Chester B. Bland, 1st Lieut., New York.
Charles P. Catalano, 1st Lieut., New York.
William Chester, Major, Mamaroneck.
Robert T. Curley, Captain, Brooklyn.
Nicholas F. Fiegoli, Captain, New York.
Charles T. Fried, Captain, New York.
Edward L. Glynn, Captain, Richmond Hill.
Sylvan A. Hertz, Captain, New York.
Nathan Hilfer, 1st Lieut., Long Island City.
Nathan B. Ludwig, Captain, Brooklyn.
Louis A. Maglio, Captain, New York.
William S. Maurer, Captain, New York.
Albert H. Meyer, Captain, Brooklyn.
Albertus W. Rappolo, Captain, Jamestown.
Louis Razinsky, Captain, Far Rockaway.
Louis E. Rosiello, Captain, Amsterdam.
George Y. Smith, Captain, Brooklyn.
Bernard P. Soehner, Major, Rochester.
Aaron Stein, 1st Lieut., Bellerose.
Herman Tarnower, Captain, Scarsdale.
Lester A. Wall Jr., Captain, Valhalla.
Guy M. Walters, Captain, Willard.
Edward C. Wood, Major, White Plains.

NORTH CAROLINA

William H. Kaufman, Captain, Hope Valley.

OHIO

Edwin H. Artman, 1st Lieut., Chillicothe.
William W. Corwin, Captain, Galion.
Philip B. Dennaine, 1st Lieut., Akron.
Benjamin S. Gillespie, Captain, Barnesville.
Donald C. Nellian, 1st Lieut., Cleveland.
Ervin S. Ross, Major, Cincinnati.
Joseph B. Schauer, Captain, Dayton.

Lester L. Williams, 1st Lieut., Mount Vernon.

OKLAHOMA

Elder D. Padberg, 1st Lieut., Ada.
Ernest R. Vahlberg, Major, Oklahoma City.

OREGON

Albert B. Baker, Major, Stanfield.
William W. Baum, Major, Salem.
Marvin J. Robb, 1st Lieut., Bend.

PENNSYLVANIA

Joseph A. Balin, Captain, Philadelphia.
William P. Bradley Jr., Captain, Sewickley.
Joseph M. Bran, 1st Lieut., Easton.
Paul Budura, 1st Lieut., Bethlehem.
Joseph E. Forman, 1st Lieut., Philadelphia.
Richard H. Gollings, 1st Lieut., Pittsburgh.
Joseph L. Hunsberger, 1st Lieut., Norristown.
Walter Klein, 1st Lieut., Pittsburgh.
Maximilian L. Konecke, Captain, Wilkes-Barre.
Louis Koolpe, 1st Lieut., Philadelphia.
William F. Lamberti, Captain, Scranton.
Daniel H. Maunz, Major, Bradford.
Edward A. Miller, 1st Lieut., Gettysburg.
Joseph W. Milliron, 1st Lieut., Kittanning.
Joe G. Reed, 1st Lieut., Sayre.
Stoughton R. Vogel, Captain, Philadelphia.

SOUTH CAROLINA

John M. Davis, Major, Columbia.

TENNESSEE

Hamilton V. Gayden, Major, Nashville.

TEXAS

Bernard H. Bloom, Captain, San Antonio.
Wilfred P. Bonin, Captain, Houston.
John J. Delany, 1st Lieut., Galveston.
Guy T. Denton Jr., Captain, Dallas.
Francis C. Goodwin, Major, El Paso.
Harold B. Griffin, 1st Lieut., Sanatorium.
Abe Hauser, Major, Houston.
James E. Loveless, 1st Lieut., Slaton.
Robert A. McCall, Captain, San Antonio.
Charles O. Moody, Captain, Coleman.
A. William Multhauf, Major, El Paso.
Theodore S. Wittels, Captain, Newton.

UTAH

Junior E. Rich, Major, Ogden.

WASHINGTON

John T. Abraham, Captain, Wenatchee.
Carroll C. Carlson, Captain, Tacoma.
Harold J. Gunderson, Captain, Everett.
Norman E. Marsh, Captain, Chehalis.
Walter E. Nawrocki, 1st Lieut., Cle Elum.
Joseph H. Whatmore, 1st Lieut., Spokane.

WEST VIRGINIA

Anthony A. Yurko, Captain, Hollidays Cove.

WISCONSIN

Marcellus C. Haines, Captain, Oshkosh.
John B. Hitz, Major, Milwaukee.
Francis C. Johnson, 1st Lieut., Madison.
Harvey G. Mallow, 1st Lieut., Watertown.
John H. Rendok, Captain, Madison.

MAJOR JAY PAUL ROLLER AWARDED SILVER STAR

Major Jay Paul Roller, formerly of Luckey, Ohio, was recently awarded the Silver Star for gallantry in action in Tunisia. The citation accompanying the award was as follows: "For gallantry in action. On the xxx April 1943, at about 1900 hours, Capt. Jay P. Roller organized and personally led four ambulances under heavy artillery and small arm fire to evacuate patients. On the xxx April 1943, in the xxx sector, Tunisia, he personally led litter squads to the actual battle field and personally supervised evacuation of wounded to the collecting company. This greatly expedited the proper treatment of the wounded. This was definitely above and beyond his line of duty, which does not call for him to go as far as the actual battle field. While returning he saw other groups of litter bearers who were from an entirely different unit and under fire for the first time scattering in panic. Without regard to his personal safety and in spite of the vast number of shells and mortar fire exploding all around him, he reorganized these men, leading them to safety without injury to a single man."

Dr. Roller graduated from the University of Louisville School of Medicine in 1939 and entered the service Jan. 5, 1941.

ARMY'S FIRST OVERSEAS TYPE HOSPITAL TRAIN

The War Department announced recently that the Army's first overseas type hospital train, built specifically for use in theaters of operations, will be used temporarily for training purposes at the California-Arizona Maneuver Area (formerly the Desert Training Center). The new traveling hospital unit, of all steel construction, has been designated the Third Hospital Train. It consists of ten cars, including six ward cars, a kitchen car, utilities car and two personnel cars for officers and enlisted men. Each of the cars is slightly more than half the length of ordinary railroad cars and was designed purposely to negotiate the sharp curves, narrow bridges and tunnels of foreign railways. The train is olive drab and displays all hospital and Red Cross markings in accordance with Geneva Convention agreements. The train also includes a pressure ventilating system, complete sterilization units, and emergency operating areas in each ward car. Personnel of the train includes four medical officers, six army nurses and thirty-three enlisted men, most of whom are technical specialists trained in medical work. Quarters for train personnel have been provided in two cars. Major Thomas Purser Jr. of McComb, Miss., is commanding officer of the train, and 1st Lieut. Serene Berg of Stoneham, Mass., is chief nurse.

GRADUATE MEDICAL ADMINISTRATIVE OFFICERS

The twenty-sixth class of the Camp Barkeley Medical Administrative Corps Officer Candidate School graduated November 17 following a sixteen weeks course of training. Since the organization of the Medical Administrative Corps their duties have been expanded to take over more and more of the nonmedical functions of the medical department. Among the varied positions now handled by the Medical Administrative Corps are litter bearer platoon leaders, motor maintenance officers, assistant registrars of large hospitals, supply and mess officers for all types of medical units, personnel adjutants and company commanders of training units. The graduation address was delivered by Dr. Rupert N. Richardson, president of the Hardin-Simmons University, Abilene, Texas. Certificates of graduation and letters of commission were presented to the new officers by Brig. Gen. Roy C. Heflebower, school commandant.

SUPERINTENDENT NAMED FOR OCCUPATIONAL THERAPY

Mrs. Winifred C. Kahmann, director of occupational therapy and physical therapy at the Indiana University Medical Center, Indianapolis-Bloomington, has been appointed superintendent of the new occupational therapy program of the Surgeon General's Office of the Army. Mrs. Kahmann has been associated with the medical center since 1926, first as director of occupational therapy of Riley Hospital and later supervising that field of work for the entire medical center. She was granted a leave of absence by the university to start her new activities in Washington, November 17. Mrs. Kahmann will work as an assistant to Major Walter E. Barton, M. C., A. U. S., formerly engaged in neuropsychiatric work in the Army, who has been placed in charge of the reconditioning division in the Surgeon General's Office.

NURSE ENDS LONG PERIOD OF SERVICE

On November 12 Lieut. Col. Lyda M. Keener, A. N. C., principal chief nurse at the Walter Reed General Hospital, Washington, D. C., retired to end the longest period of service in the history of the Army Nurse Corps. Colonel Keener had completed thirty-seven years and five months of duty with the corps. She was born in Greensburg, Pa., and graduated at the McKeesport General Hospital in September 1905. She entered the Army Nurse Corps in June 1906. The letter assigning her to her first station, San Francisco, was signed by Dita H. Kinney, first superintendent of the corps. Capt. Gertrude Thomson, A. N. C., Lovell General Hospital, Fort Devens, Mass., has been assigned to Walter Reed General Hospital to succeed Colonel Keener.

ARMY CAMP IN NEW ZEALAND NAMED AFTER DR. CLAUDE E. HALE

The War Department recently informed the wife of Capt. Claude E. Hale Jr., who met his death as a result of a motor vehicle accident on Nov. 5, 1942 in New Zealand, where he was serving in the medical corps, that the United States Army camp located at Auckland Domain, Auckland, North Island, New Zealand, has been named Camp Hale in honor of her husband. Dr. Hale graduated from Vanderbilt University School of Medicine in 1917 and entered the service in May 1941.

MEETING OF MEDICAL OFFICERS

Brig. Gen. Fred W. Rankin, formerly President of the American Medical Association and now consultant in surgery, Surgeon General's Office, addressed the monthly meeting of medical officers at the Army Medical Center, Washington, D. C., October 18, on "Observations of a Recent Visit to Theaters of Operation." Col. Crawford W. Sams, M. C., who recently returned from overseas service and is now at the Medical Field Service School, Carlisle Barracks, Pennsylvania, spoke on "Medical Experience in the Middle East."

Air Marshal Sir Harold Wittingham of England addressed the meeting extemporaneously.

TWO ARMY NURSES KILLED WHILE ON DUTY OVERSEAS

Two army nurses from West Virginia were killed recently while on duty overseas. Lieut. Louise Link of Richwood was killed in action, probably in Sicily, and Lieut. Martha Thurmond of Charleston was killed in a jeep accident in North Africa. Lieutenant Link graduated from the McMillan Hospital school of nursing, Charleston, in 1941 and later served on the nursing staff at Charleston General Hospital. Lieutenant Thurmond was formerly on the nursing staff at St. Francis Hospital, Charleston.

NAVY

JAPANESE ATTACK U. S. NAVAL FIELD HOSPITAL DURING OPERATION

Lieut. Comdr. Gordon Bruce, formerly of New York City, in a recent news dispatch from Torokina Cape, Bougainville Island, described how the Japanese attacked a United States Navy field hospital on November 7 during a battle near the Koromokina River, which read as follows: "We set up our tents near the beach on the left flank. At noon marine casualties from that sector began coming in and at 1 o'clock we had 32 patients. The Japs began their attack on the hospital then. My surgeons were operating on a marine when shots ripped through the tent. I ran to the beach with a couple of corpsmen and unscrewed three machine guns from Higgins boats which were smashed in the original landings. We brought the guns back to the hospital and I drafted a few marines to operate them and set up a defense line. A sniper's bullet through the top of the tent went into the lung of a chief pharmacist's mate. We evacuated him at once. It began to rain, and water filled up our foxhole operating rooms. At 2 o'clock the firing increased and I sent a runner to ask a marine commander on the beach for help. He had only fifteen men and couldn't spare them. Then I got two marines plodding up a jungle trail to take up guard positions in the jungle 30 feet from the tent. The corpsmen piled sandbags around tents. Finally a platoon of marines came to our aid and set up a defensive position. My surgeons continued operating until 9 o'clock. Only then did we evacuate the patients, now numbering 50. Not 1 died. Once during the fighting I was told we had better evacuate, but we couldn't because some marine patients required delicate surgery for brain injuries before they could be moved. The two marines I impressed into service were found late that afternoon. They had been killed by rifle fire and stripped of everything except their pants. The Japs even took their identification tags. I feel terrible about these two boys, who were so willing to help. Our operations were performed under small battery powered lights. I can't pay enough tribute to my men. Lieut. Herbert Hawley, Elwood, Neb., dentist attached to our unit, is the most completely fearless individual I ever knew."

Surgeons performing operations under fire included Lieut. Comdr. Raymond R. Callaway, Birmingham, Ala., and Lieuts. James Emert, New York City; William Peck, Falls City, Neb.; Frank Adair, St. Paul, and W. F. Barker, Corpus Christi, Texas. Helping the wounded was 1st Lieut. Leo Halatek, Chicago, marine quartermaster. Dr. Bruce was commander of the medical unit.

OXYGEN THERAPY CLASSES AT U. S. NAVAL HOSPITAL IN SAN DIEGO

Lieut. Comdr. Paul L. Yordy, U.S.N.R., former anesthetist at th. Miami Valley Hospital, Dayton, Ohio, has been named co-supervisor of oxygen therapy classes which are being held at the U. S. Naval Hospital, San Diego, Calif. The intensive program, the first of its kind in a military hospital, is designed to train several hundred Navy men and Waves to operate the iron lung, oxygen tents and similar pieces of apparatus and are taught to improvise their own equipment on the battlefield or aboard ship to aid doctors in the care of patients during emergencies. While war casualties have not increased the use of the iron lung in individual military hospitals, training of operators has been deemed essential because of the opening of numerous new hospitals in widely separated areas. The oxygen tent, nasal catheters and B. L. B. masks are used more often than ever before at naval base hospitals and in mobile hospitals on the war fronts because of the large number of operations necessitated by war injuries. They are also used during postoperative treatment to enrich the system. The San Diego hospital unit maintains a twenty-four hour watch ready to serve with oxygen apparatus.

Dr. Yordy graduated from the Ohio State University College of Medicine in 1926, received his commission in March 1942 and was assigned to the Dayton Medical Specialist Unit at the San Diego Hospital under the leadership of Comdr. Walter Simpson of Dayton, Ohio.

LIEUTENANT COMMANDER BUNCH AWARDED NAVAL RESERVE MEDAL

The chief of the Bureau of Naval Personnel announced recently that Lieut. Comdr. Charles Bunch (MC), U.S.N.R., formerly of Charlotte, N. C., and now stationed at a naval hospital in the Caribbean area, has been awarded the Naval Reserve Medal for his long service and action in the reserve. Dr. Bunch graduated from the Medical College of the State of South Carolina, Charleston, in 1931, entered the reserve as a junior grade lieutenant in 1933 and was promoted to lieutenant in 1937 and lieutenant commander in January 1942. He was on active duty before the war began and was on recruiting duty at the Charlotte and Raleigh stations. He has seen service at sea, in the Navy hospital in Washington and on the surgical staff of the navy hospital at Parris Island, S. C. Dr. Bunch, in addition to the new award, also holds the Defense Service medal and the America Area Campaign medal.

PHYSICIAN HONORED

The theater in the Aleutians of the Navy's Fifty-Second Construction Battalion has been named "Connolly Hall" in honor of Lieut. (jg) Henry Hill Connolly (MC), U.S.N.R., who died three days before the "outfit" left the United States. Dr. Connolly died on January 5 of meningococcic meningitis, aged 27. The decision to name the theater, which is also used for religious services, was made by the men in a contest conducted to select the most appropriate name. The young medical officer resided in Beverly, Mass. (THE JOURNAL, July 3, p. 693).

PRISONER OF THE JAPANESE

Lieut. Comdr. Herbert C. Brokenshire (MC), U.S.N.R., who was reported "missing in action" following the capture of Manila in 1941, was recently reported a prisoner of the Japanese at the headquarters of the military prisons of the Philippines, according to the Boston *Evening Globe*, September 3. Dr. Brokenshire graduated from Cornell University Medical College in 1924 and since 1926 has served as a medical missionary at Davao on the island of Mindanao in the Philippines.

MISCELLANEOUS

MAJOR GENERAL MAGEE BECOMES EXECUTIVE OFFICER OF INFORMATIONAL SERVICE

Prof. Ross G. Harrison, chairman of the National Research Council, has announced the appointment of Major Gen. James Carre Magee, Medical Corps, United States Army, retired, as executive officer of the Informational Service of the Council's Division of Medical Sciences. This service has been established by the National Research Council under the recent grant of the Johnson and Johnson Research Foundation, by which the sum of $75,000 was made available to the council for the period ending June 30, 1945. The purpose of the grant was to enable the council to assemble and disseminate, as far as possible, medical information pertaining to the war effort.

General Magee has had a distinguished record in the Medical Corps of the Army. A graduate of Jefferson Medical College in 1905, he has spent his entire professional life in the medical service of the Army. He was assigned to the Philippines before the outbreak of the first world war and then recalled for European duty from 1917 to 1919. He was appointed Surgeon General of the Army in 1939, and on May 31, 1943 he was retired on completion of the four year term of duty. It was under his direction that the Medical Corps was enormously expanded to meet the demands of the present war and the program of service adopted which has led to the remarkable health record of the Army. General Magee holds the honorary degree of doctor of science from Jefferson Medical College and was recently awarded the Distinguished Service Medal for outstanding accomplishments as Surgeon General.

General Magee, on assuming his duties, will devote full time to the organization of a central office in the National Research Council which will collect medical reports and records widely dealing with military medical practice, civilian practice as affected by the war, medical education and research and the distribution of diseases. The materials collected will, so far as military necessities permit, be made available by publications, summaries and notes.

CARE OF THE WOUNDED IN WORLD WAR II

The Office of War Information in a recent report on the care of wounded soldiers, sailors, marines and coast guardsmen, based on information obtained from the Army and Navy medical departments, shows that the battle casualty who escapes outright death has a better chance of coming out alive in this war than he did in the last, because of the speedier and more effective treatment of their wounds. It has been estimated by the Army Medical Department that between 80 and 90 per cent of the wounded get first aid treatment within an hour of being wounded.

FIGURES INCONCLUSIVE

The figures indicate that the ratio of killed in action to battle casualties is twice as high in this war as it was in the last, but the mortality rate among the wounded is only half as high in this war as it was in the last. Three main reasons are given: (1) the use of blood plasma to combat shock and hemorrhage, (2) the use of sulfonamide to combat infection and (3) the mobility and organization of medical services which insure prompt and efficient medical and surgical treatment.

Capt. Winchell M. Craig, chief of surgery at the Naval Medical Center, Bethesda, Md., cited a report of head wound casualties in one of the Egyptian campaigns which showed a mortality rate of only 9 per cent as against a mortality rate of between 50 and 60 per cent for head wounds in the last war. Major Gen. Albert W. Kenner, Assistant Surgeon General of the Army, credited blood plasma with saving the lives of many of the 400 American sailors who were burned when their ship was blown up 5 miles out from Casablanca. Capt. M. J. Aston of the Navy Medical Corps reported that during twenty months he was senior medical officer of a naval hospital ship in the South Pacific, 360 burned patients were treated with a loss of only 3 lives, only 1 of them from burns alone. Treatment consisted in cleaning the wounds with soap and water, applying sulfathiazole and pressure dressings, and grafting skin over the burned areas as soon as possible. In the field of surgery, medical officers regard highly the guillotine or flapless type of amputation, which is being used widely in both branches of the service.

MENTAL CASES

In the last war 3 per cent of the men were rejected at induction as mentally unfit for military life. In this war between 8 and 10 per cent of the men examined have been rejected at induction for the same reason. Despite this more rigid screening, the incidence of neuropsychiatric disorders has been high, particularly among combat troops. In the various overseas theaters hospital admissions for such cases have been as high as 20 to 25 per cent of hospital admissions for all causes due to combat.

The late Col. Roy D. Halloran, chief of the Neuropsychiatry Branch of the Army Medical Department, said that "Ordinarily one thinks of nervous breakdowns as occurring only in weaklings or in people who are fundamentally unstable. This is not true in warfare. Obviously, some people break down or give up sooner than others, but under the extremes of horror and fatigue of modern warfare the best and strongest among us has his breaking point at which the will to fight is lost and a nervous breakdown occurs." Fatigue, lack of food, fear, noise and the sight of wounded and dying comrades are common causes of breakdown in combat. The more these causes can be eliminated or diminished, the fewer will be the casualties from nervous breakdown. The effects of fatigue and lack of food can be best counteracted by frequent use of reserves, which, however, may not be possible in a war of movement. Colonel Halloran further said that "the soldier must be taught that fear is a normal reaction and is not the mark of a coward. It is experienced by even the bravest. It is important, however, to substitute fear of the consequences of defeat or fear of combat."

WARTIME GRADUATE MEDICAL MEETINGS

Among the subjects scheduled for early presentation under the auspices of the Wartime Graduate Medical Meetings are the following at Camp Lee, Va.: Amputations, Upper and Lower Extremities, Dr. James T. Tucker, December 10; Fractures, Lieut. Col. Martillus H. Todd, December 17; Psychoneurosis, Maladjustment Neuropsychiatry, Dr. O. D. Darden, January 7; Dysenteries, Dr. J. A. Scherer, January 14; Newer Drugs and Their Uses in Practice, Dr. Harvey B. Haag, January 21; Diagnosis and Treatment of Contagious Disease, Dr. Harry Walker, January 28.

At Fort Eustis, Virginia: Psychoneurosis, Maladjustment Neuropsychiatry, Dr. David Cole Wilson, December 16.

At the U. S. Naval Hospital and U. S. Naval Academy Dispensary, Annapolis, Md.: Treatment of Chest Injuries, Dr. Frederick C. Fishback, December 17; Psychoneurosis Among the Armed Forces, Dr. Riley H. Guthrie, January 21; Rickettsia, Diagnosis, Treatment and Prevention (demonstrated with lantern slides), Dr. Rolla E. Dyer, February 18.

At Norfolk Naval Hospital, Portsmouth, Va.: Treatment of Fractures (Demonstrated with X-Rays), Dr. Custis Lee Hall, December 9; Diagnosis and Treatment of Gastrointestinal Infections, Dr. T. Neill Barnett, December 10.

At Camp Shanks, Orangeburg, N. Y.: Orthopedic Problems in the Soldier, Dr. J. C. McCauley, December 23; Nephritis, Dr. A. M. Fishberg, January 13; Common Skin Diseases in Soldiers, Dr. G. C. Andrews, January 27.

At Station Hospital, Indiantown Gap, Pa.: Psychiatry, Dr. Edward Strecker, December 10.

CIVILIAN DEFENSE

HEALTH AND MEDICAL COMMITTEES URGED TO ASSIST WITH WARTIME HEALTH PROBLEMS

In a pamphlet recently issued by the Office of Civilian Defense, it is recommended that medical advisory councils organized in the developmental period of civilian defense as part of the Emergency Medical Service of local defense councils should merge with health and medical committees of the Civilian War Services branch of defense councils. In addition to advising the chief of Emergency Welfare Service, the committee should support the health officer and serve as a means of mobilizing community support for meeting health problems.

The purposes of the health and medical committees suggested in the pamphlet, entitled "Health Service in Wartime," are (1) development of adequate wartime coordinated health programs in each community and (2) the building up of citizens' understanding and participation.

Membership in the committee should include the local health officer, the local chief of Emergency Medical Service, and representatives of the local welfare and education departments, of the medical and nursing professions, of organized labor and industry or farming, and of the voluntary health and social agencies, parent-teacher associations, and civic groups.

It is recommended that the health and medical committee of a local defense council act as a steering committee for functional subcommittees. Because health and medical problems vary greatly among communities, the pamphlet does not present a blueprint for subcommittee organization and work. It does, however, list examples of the problems that face many communities in wartime and suggests how the health and medical committee may assist in solving them. It is emphasized that the work of the health and medical committee should not duplicate or interfere with the activities of other agencies; if an adequate working group has been established in any health field, it should be requested to serve as the appropriate subcommittee.

Among the suggested health and medical problems which the program of the health and medical committees of defense councils might include are communicable disease control, maternal and child health including school health programs, health of young workers and day care for children of working mothers, accident prevention, nutrition and conservation of essential foods, environmental sanitation, provision of medical and nursing care and the use of volunteers in health programs.

OFFICE OF CIVILIAN DEFENSE ISSUES MANUAL ON EMERGENCY CARE OF INJURED

The Medical Division, Office of Civilian Defense, Washington, D. C., recently issued a new manual in which is described the immediate care that can be given to injured persons at the site of a disaster and technics of transporting them to safety and medical attention. The work is based on procedures and organization developed by the Office of Civilian Defense and careful study of three years of British and other air raid experience.

The 117 page book is divided into three parts, "Civilian Defense," "Emergency Field Care" and "Transportation of the Injured." Part I describes the organization and operation of the field casualty service developed by the Medical Division, which includes mobile medical teams, based on hospitals wherever possible; express parties, made up of a medical team, a rescue squad, an ambulance and a car for sitting cases dispatched through the control center to a disaster for immediate action; casualty stations for the care of casualties with minor injuries; stretcher teams, and ambulances.

Part II includes a discussion of the injuries and conditions most frequently encountered in wartime disaster, namely hemorrhage, shock, fractures, burns, suffocation and carbon monoxide poisoning. There are chapters on principles of bandaging, with detailed illustrations; marking of casualties and disposal of the dead; methods of blanketing a casualty, and methods of lashing a casualty to a stretcher.

Special attention is given to crush and blast injuries. Crushing wounds may result from falling masonry, girders, beams or whole floors dislodged by bomb explosions. Although these injuries may be immediately fatal, casualties often show little sign of injury when released, the manual points out. Their condition may appear good for a few hours and yet they may die of kidney failure several days later. Directions for first aid are included, and workers are warned that any person "who has been trapped by débris which has pressed on any part of the body must be regarded as a serious casualty." The importance of administering by mouth abundant quantities of fluids and alkalis (sodium bicarbonate) is stressed.

Persons exposed to blast from high explosive may also suffer serious internal injury without external evidence of it. The manual urges all persons concerned with the handling of casualties to "suspect blast injuries in every person found near the site of a bomb explosion, especially those who have obviously suffered injury and yet show no external evidence of it."

More extensive discussions of these two types of injury are included in the recent OCD publication "Clinical Recognition and Treatment of Shock."

The section of the manual devoted to transportation of the injured describes regular and improvised stretchers and gives directions for stretcher bearing, with a separate section on types of injury that require special care in moving. Another chapter explains methods of carrying the injured without stretchers, and the final chapter explains the ambulance service of the civilian defense organization and presents specific instructions for loading and unloading ambulances. The latter instructions describe procedures required if war gases are encountered.

The manual is intended primarily for the training of rescue workers, medical auxiliaries, ambulance drivers and attendants, and stretcher bearers of the Emergency Medical Service. In the appendix are a schedule of training based on the manual, the OCD operations letter describing the work of stretcher teams, the Rescue Service and instructions on self aid in case of exposure to war gas, and a section on electrical hazards.

ENROLMENT OF HOSPITAL PERSONNEL IN THE U. S. CITIZENS DEFENSE CORPS

The Office of Civilian Defense, Washington, D. C., issued on November 9 Circular Medical Series No. 34 on the "Enrolment of Hospital Personnel in the U. S. Citizens Defense Corps," which presents the Office of Civilian Defense policy covering the enrolment of hospital personnel in the Citizens Defense Corps under the provisions of Office of Civilian Defense Regulations No. 3, revised in August 1943, and is intended for the guidance of commanders, chiefs of emergency medical service and hospital administrators. Certain hospital personnel may be enrolled in the following units of the Citizens Defense Corps provided all requirements regarding eligibility, registrations, training, appointment and oath, as set forth in the Regulations, are met:

Medical Unit: Persons who have duties related to the care of casualties and who are expected to report and work at the hospital as volunteers on an air raid alert.

Nurses' Aides Unit: Volunteer Nurses' Aides.

Other Units: Persons who have specific assignments related to the maintenance of hospital services or to the protection of hospital personnel, buildings or grounds who are expected to report and work as volunteers on air raid alerts. Such persons should be trained for and enrolled in appropriate units of the Citizens Defense Corps (Air Raid Wardens, Fire Guard, Communications, Emergency Welfare, Utility Repair, and so on).

Provision for the movement of other essential hospital personnel during restricted periods can be made by the local defense council through appointment of such personnel to the Civilian Defense Auxiliary Group (Operations Letter No. 37 and supplements).

Registered trainees for and enrolled members of all units of the U. S. Citizens Defense Corps are eligible for War Civilian Security benefits if injured in the performance of official duties.

"Performance of official duties" includes activities at the time of an air raid alert, activities undertaken in training, drills and exercises approved in accordance with Office of Civilian Defense Regulations No. 3, Revised in August 1943, and going to and from posts of duty in connection with such activities.

TEMPORARY HOSPITALIZATION FOR CIVILIANS INJURED AS RESULT OF ENEMY ACTION

The Office of Civilian Defense, Washington, D. C., issued on November 10 Circular Medical Series No. 12, which is an amendment to the agreement between the Federal Security Agency and the Office of Civilian Defense (THE JOURNAL, March 21, 1942, p. 983) regarding temporary hospitalization for civilians injured as the result of enemy action. Under the agreement announced on March 13, 1942 the Public Health Service planned to pay $3.75 per patient day for hospitalization of patients of the Emergency Medical Service in both casualty receiving hospitals and emergency base hospitals. This rate was based on that in effect for government hospitals at the time of the agreement as established by the Federal Board of Hospitalization. Effective July 1, 1943 the Federal Board of Hospitalization has raised the per diem for government hospitals to $4.25, and this change has been approved by the President. As of July 1 the Public Health Service agreed to pay the salaries of a limited number of graduate nurses to be recruited by the Emergency Medical Service to supplement the nursing staffs of institutions designated as emergency base hospitals if and when such hospitals are activated. Also effective July 1, 1943 the Public Health Service will pay the necessary minimum cost for the transportation of patients ordered by respective state chiefs of Emergency Medical Service to be transferred to emergency base hospitals.

PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS, DENTISTS AND VETERINARIANS

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their Procurement and Assignment Service quotas for Jan. 1, 1944.

1. Prospective interns who have not yet obtained a hospital appointment should communicate with these institutions either directly or through the office of the dean of their medical school. Assistant residents and residents should direct their applications to the hospital superintendent in the usual manner.

2. Institutions having a shortage of interns or residents are again invited to make their needs known to the Council on Medical Education and Hospitals. In reporting shortages, hospitals should indicate the number of interns, assistant residents and residents needed to complete their quotas for Jan. 1, 1944.

Hospitals Reporting Vacancies for Interns or Residents

(Continuation of list in THE JOURNAL, November 27, p. 843)

ARIZONA

St. Joseph's Hospital, Phoenix. Capacity, 244; admissions, 9,709. Sister M. Eucharia, Superintendent (1 intern).

CALIFORNIA

Glendale Sanitarium and Hospital, Glendale. Capacity, 277; admissions, 6,729. Dr. A. W. Truman, Medical Director (2 interns).

California Babies' & Children's Hospital, Los Angeles. Capacity, 30; admissions, 475. Rosanna Stockley, Superintendent (resident—pediatrics).

Mary's Help Hospital, San Francisco. Capacity, 155; admissions, 4,536. Sister Basil, Superintendent (interns, resident).

Santa Barbara Cottage Hospital, Santa Barbara. Capacity, 190; admissions, 3,651. Mrs. Gladys Smits, Superintendent (1 resident).

Santa Barbara General Hospital, Santa Barbara. Capacity, 312; admissions, 2,175. Mrs. Eva L. Wilson, Superintendent (resident—mixed).

COLORADO

Colorado General Hospital, Denver. Capacity, 265; admissions, 4,240. Dr. Maurice H. Rees, Medical Superintendent (6 residents, including radiology, ophthalmology).

Colorado Psychopathic Hospital, Denver. Capacity, 78; admissions, 876. Dr. Charles A. Rymer, Acting Director (resident—psychiatry).

St. Anthony Hospital, Denver. Capacity, 220; admissions, 5,275. Sister M. Mechtildis, Superintendent (2 interns).

Colorado State Hospital, Pueblo. Capacity, 4,387; admissions, 775. Dr. F. H. Zimmerman, Superintendent (3 residents—psychiatry).

CONNECTICUT

Meriden Hospital, Meriden. Capacity, 147; admissions, 3,552. Miss Nellie K. Ferguson, Superintendent (2 interns).

New Haven Hospital, New Haven. Capacity, 589; admissions, 11,488. Mr. James A. Hamilton, Director (2 residents—psychiatry).

Lawrence and Memorial Associated Hospitals, New London. Capacity, 291; admissions, 4,341. Mr. Richard J. Hancock, Administrator (3 interns).

Laurel Heights State Tuberculosis Sanatorium, Shelton. Capacity, 382; admissions, 311. Dr. Edward J. Lynch, Medical Director (resident—tuberculosis).

DELAWARE

Delaware State Hospital, Farnhurst. Capacity, 1,247; admissions, 340. Dr. M. A. Tarumianz, Superintendent (resident—psychiatry).

DISTRICT OF COLUMBIA

Gallinger Municipal Hospital, Washington. Capacity, 1,450; admissions, 15,828. Dr. Edgar A. Bocock, Medical Superintendent (3 assistant residents—OBG, ENT).

FLORIDA

Pensacola Hospital, Pensacola. Capacity, 197, admissions, 6,248. Sister Vincent, R.N., Superintendent (intern, resident—mixed).

ILLINOIS

City of Chicago Municipal Tuberculosis Sanitarium, Chicago. Capacity, 1,219; admissions, 1,811. Dr. Leo M. Czaja, General Superintendent (resident—thoracic surgery).

Cook County Hospital, Chicago. Capacity, 3,188; admissions, 67,328. Dr. Ole C. Nelson, Medical Superintendent (7 residents—pathology, radiology, psychiatry).

INDIANA

St. Vincent's Hospital, Indianapolis. Capacity, 340; admissions, 8,480. Sister Andrea, Superintendent (2 interns).

IOWA

Jennie Edmundson Memorial Hospital, Council Bluffs. Capacity, 157; admissions, 3,010. Miss Dorothea Ely, Superintendent (1 intern).

University Hospitals, Iowa City. Capacity, 954; admissions, 20,996. Mr. Robert E. Neff, Administrator (7 residents).

KENTUCKY

Kentucky Baptist Hospital, Louisville. Capacity, 150; admissions, 5,003. Mr. H. L. Dobbs, Superintendent (3 interns).

St. Anthony's Hospital, Louisville. Capacity, 163; admissions, 4,476. Sister Mary Edigna, R.N., Superintendent (1 intern).

MARYLAND

Bon Secours Hospital, Baltimore. Capacity, 190; admissions, 3,832. Sister Helena, R.N., Superintendent (2 interns).

Hospital for Women, Baltimore. Capacity, 162; admissions, 3,369. Dr. Merrill L. Stout, Medical Director (2 interns).

St. Joseph's Hospital, Baltimore. Capacity, 302; admissions, 6,910. Sister M. Pierre, R.N., Superintendent (4 interns).

Union Memorial Hospital, Baltimore. Capacity, 384; admissions, 7,847. Dr. Willard L. Quennell, Director (Intern, resident—OB).

Spring Grove State Hospital, Catonsville. Capacity, 2,100; admissions, 619. Dr. Silas W. Weltmer, Medical Superintendent (residents—psychiatry).

MASSACHUSETTS

McLean Hospital, Belmont. Capacity, 232; admissions, 212. Dr. W. Franklin Wood, Medical Director (4 residents—psychiatry).

Gardner State Hospital, Gardner. Capacity, 1,425; admissions, 178. Dr. Charles E. Thompson, Medical Superintendent (3 residents—psychiatry).

Danvers State Hospital, Hathorne. Capacity, 2,371; admissions, 794. Dr. Clarence A. Bonner, Medical Superintendent (resident—psychiatry).

Lawrence General Hospital, Lawrence. Capacity, 218; admissions, 4,774. Miss Beatrice K. Barnes, R.N., Superintendent (1 intern).

Medfield State Hospital, Medfield. Capacity, 1,859; admissions, 191. Dr. Earl K. Holt, Medical Superintendent (resident—psychiatry).

St. Luke's Hospital, New Bedford. Capacity, 339; admissions, 7,585. Mr. Scott Whitcher, Superintendent (1 intern).

House of Mercy Hospital, Pittsfield. Capacity, 243; admissions, 4,053. Miss Edith Atkin, R.N., Superintendent (2 interns).

Middlesex County Sanatorium, Waltham. Capacity, 380; admissions, 330. Dr. Sumner H. Remick, Medical Superintendent (resident—tuberculosis).

Waltham Hospital, Waltham. Capacity, 215; admissions, 3,172. Mr. Walter R. Amesbury, Administrator (3 interns).
Westfield State Sanatorium, Westfield. Capacity, 239; admissions, 876. Dr. Roy Morgan, Medical Superintendent (2 residents—TB).
Belmont Hospital, Worcester. Capacity, 250; admissions, 987. Dr. Huston K. Spangler, Medical Superintendent (residents—TB., communicable diseases).
Worcester City Hospital, Worcester. Capacity, 550; admissions, 11,941. Dr. George A. MacIver, Medical Superintendent (4 interns).

MICHIGAN

Mercy Hospital, Bay City. Capacity, 150; admissions, 3,960. Sr. Mary Thomasine, R.N., Superintendent (2 interns).
Evangelical Deaconess Hospital, Detroit. Capacity, 220; admissions, 8,653. John L. Ernst, Superintendent (resident—mixed).
St. Mary's Hospital, Detroit. Capacity, 387; admissions, 9,429. Sister Marie, R.N., Superintendent (6 interns).
Highland Park General Hospital, Highland Park. Capacity, 225; admissions, 7,008. Mr. R. E. Geoghegan, Superintendent (three interns).
Mercy Hospital, Jackson. Capacity, 150; admissions, 4,087. Sister Margaret Mary, R.N., Superintendent (2 interns).
Traverse City State Hospital, Traverse City. Capacity, 2,743; admissions, 606. Dr. R. Phillip Sheets, Medical Superintendent (residents—psychiatry).

MISSOURI

Robert Koch Hospital, Koch. Capacity, 688; admissions, 311. Dr. George D. Kettelkamp, Superintendent and Medical Director (2 residents—TB).
Lutheran Hospital, St. Louis. Capacity, 190; admissions, 5,136. Rev. E. C. Hofius, Superintendent (1 intern).
City Sanitarium, St. Louis. Capacity, 3,500; admissions, 756. Dr. W. L. Moore, Superintendent (4 residents—psychiatry).

NEBRASKA

Bishop Clarkson Memorial Hospital, Omaha. Capacity, 150; admissions, 4,067. Miss Cecelia Meister, R.N., Superintendent (interns, resident—surgery).

NEW HAMPSHIRE

New Hampshire State Hospital, Concord. Capacity, 2,386; admissions, 665. Dr. Charles Hall Dolloff, Medical Superintendent (resident—psychiatry).

NEW JERSEY

Bayonne Hospital and Dispensary, Bayonne. Capacity, 250; admissions, 4,592. Mr. Joseph Brady, Superintendent (4 interns).
New Jersey Sanatorium for Tuberculosis Diseases, Glen Gardner. Capacity, 494; admissions, 512. Dr. S. B. English, Superintendent (resident—TB).
Jersey City Hospital, Jersey City. Capacity, 900; admissions, 18,432. Dr. George O'Hanlon, Medical Director (15 interns).
Morristown Memorial Hospital, Morristown. Capacity, 158; admissions, 3,382. Col. Charles Rees Lloyd, Director (interns).
Pitkin Memorial Hospital, Neptune. Capacity, 190; admissions, 4,235. Mr. William L. LeStrange, Superintendent (1 intern).
St. Francis Hospital, Trenton. Capacity, 343; admissions, 7,104. Sister M. Reguiata, R.N., Superintendent (2 interns).

NEW YORK

Binghamton City Hospital, Binghamton. Capacity, 339; admissions, 9,690. Mr. Jerome F. Peck, Superintendent (resident—psychiatry).
Coney Island Hospital, Brooklyn. Capacity, 300; admissions, 6,399 (2 interns).
St. Peter's Hospital, Brooklyn. Capacity, 241; admissions, 3,234. Rev. Sister Charitas, Superintendent (interns).
Our Lady of Victory Hospital, Lackawanna. Capacity, 180; admissions, 3,991. Sister M. Bathilde, Superintendent (2 interns).
Middletown State Homeopathic Hospital, Middletown. Capacity, 3,538; admissions, 685. Dr. Walter A. Schmitz, Medical Superintendent (2 residents—psychiatry).
New Rochelle Hospital, New Rochelle. Capacity, 309; admissions, 6,516. Mr. Alex E. Norton, Superintendent (1 intern).
Bronx Hospital, New York City. Capacity, 409; admissions, 8,897. Mr. William D. Seltzer, Superintendent (4 interns).
French Hospital, New York City. Capacity, 332; admissions, 6,074. Sister Mary of St. Odile, Superintendent (intern, 2 residents—anesthesia, OB).
Harlem Hospital, New York City. Capacity, 763; admissions, 16,959. Dr. E. Lifshutz, Medical Director (2 interns).
Knickerbocker Hospital, New York City. Capacity, 200; admissions, 3,550. Mr. B. E. Foss, Superintendent (5 interns).
Misericordia Hospital, New York City. Capacity, 263; admissions, 4,061. Sister St. Theresa, R.N., Superintendent (2 interns).
Montefiore Hospital for Chronic Diseases, New York City. Capacity, 713; admissions, 1,720. Dr. E. M. Bluestone, Director (resident—dermatology).
New York City Hospital, New York. Capacity, 880; admissions, 8,538. Dr. Thomas I. Price, Superintendent (resident—neurology).
New York Polyclinic Medical School and Hospital, New York. Capacity, 374; admissions, 8,356. Mr. A. Jaller, Executive Officer (2 interns, 2 assistant residents—anesthesia, EENT).
Riverside Hospital, New York. Capacity, 360; admissions, 606. Dr. John A. Cahill, Medical Superintendent (4 asst. residents—TB).
Municipal Sanatorium, Otisville. Capacity, 420; admissions, 588. Dr. I. D. Bobrowitz, Medical Superintendent (2 residents—TB).
Iola-Monroe County Tuberculosis Sanatorium, Rochester. Capacity, 370; admissions, 332. Dr. Ezra Bridge, Medical Superintendent (resident—TB).
Sea View Hospital, Staten Island. Capacity, 2,008; admissions, 2,251. Dr. Morris A. Jacobs, Medical Superintendent (12 residents—TB).
Staten Island Hospital, Staten Island. Capacity, 304; admissions, 5,506. Mr. William E. P. Collins, Superintendent (5 interns).
Troy Hospital, Troy. Capacity, 296; admissions, 4,546. Sister Angela, Superintendent (4 interns).
White Plains Hospital, White Plains. Capacity, 202; admissions, 4,297. Mr. Thomas T. Murray, Superintendent (2 interns).
Harlem Valley State Hospital, Wingdale. Capacity, 4,627; admissions, 492. Dr. Harry A. La Burt, Medical Superintendent (3 residents—psychiatry).
St. Joseph's Hospital, Yonkers. Capacity, 197; admissions, 2,554. Sister Mary Barbara, Superintendent (2 interns).

NORTH CAROLINA

Park View Hospital, Rocky Mount. Capacity, 120; admissions, 2,782. Mr. J. L. Melvin, Superintendent (1—mixed).

NORTH DAKOTA

St. John's Hospital, Fargo. Capacity, 230; admissions, 6,605. Sister Harriet, R.N., Superintendent (2—mixed).

OHIO

Deaconess Hospital, Cincinnati. Capacity, 205; admissions, 5,042. Mr. William H. Frersling, Superintendent (2 interns).

OREGON

Oregon State Hospital, Salem. Capacity, 2,800; admissions, 999. Dr. John C. Evans, Medical Superintendent (residents—psychiatry).

PENNSYLVANIA

Allentown Hospital, Allentown. Capacity, 375; admissions, 8,293. Mr. George W. Sherer, Superintendent (1 intern).
Altoona Hospital, Altoona. Capacity, 185; admissions, 3,634. Mr. Robert L. Gill, Superintendent (2 interns).
Mercy Hospital, Altoona. Capacity, 180; admissions, 3,867. Mother M. Otillia, Superintendent (interns).
Nesbitt Memorial Hospital, Kingston. Capacity, 130; admissions, 3,248. Mr. Kingsley A. Eckert, Superintendent (1 intern).
Norristown State Hospital, Norristown. Capacity, 4,308; admissions, 915. Dr. Arthur P. Noyes, Medical Superintendent (3 residents—psychiatry).
Philadelphia Hospital for Contagious Disease, Philadelphia. Capacity, 1,000; admissions, 4,933. Dr. Pascal F. Luchesi, Superintendent & Medical Superintendent (2 assistant residents).
St. Joseph's Hospital, Philadelphia. Capacity, 269; admissions, 4,093. Sister Eulalia, R.N., Superintendent (interns).
Warren State Hospital, Warren. Capacity, 2,700; admissions, 698. Dr. Robert H. Israel, Superintendent (residents—psychiatry).
White Haven Sanatorium, White Haven. Capacity, 240; admissions, 274. Mr. Harold Prentzel, Administrator (residents—TB).
Wilkes-Barre General Hospital, Wilkes-Barre. Capacity, 403; admissions, 7,894. Mr. Elmer E. Matthews, Administrator (1 intern).

RHODE ISLAND

Memorial Hospital, Pawtucket. Capacity, 195; admissions, 4,382. Mr. Walter E. Wright, Superintendent (4 interns).
Butler Hospital, Providence. Capacity, 174; admissions, 167. Dr. Arthur H. Ruggles, Medical Superintendent (resident—psychiatry).
Rhode Island Hospital, Providence. Capacity, 463; admissions, 10,059. Dr. D. L. Richardson, Medical Superintendent (1 intern).

TEXAS

Texas Scottish Rite Hospital for Crippled Children, Dallas. Capacity, 50; admissions, 580. Miss Annie Laurie Little, R.N., Superintendent (assistant resident—orthopedics).
St. Mary's Infirmary, Galveston. Capacity, 235; admissions, 4,338. Sister Mary Lelia, Superintendent (resident—mixed).
Nix Hospital, San Antonio. Capacity, 188; admissions, 4,768. Miss Ellen Louise Briest, R.N., Superintendent (1 intern).
Robert B. Green Memorial Hospital, San Antonio. Capacity, 270; admissions, 4,803. Dr. Alexander Mileau Jr., Medical Superintendent (resident—mixed).

UTAH

Holy Cross Hospital, Salt Lake City. Capacity, 274; admissions, 6,250. Sister Mary Virginia, R.N., Superintendent (intern, resident—mixed).

WASHINGTON

Western State Hospital, Fort Steilacoom. Capacity, 3,034; admissions, 967. Dr. William N. Keller, Medical Superintendent (resident—psychiatry).
Eastern State Hospital, Medical Lake. Capacity, 2,099; admissions, 489. Dr. M. W. Conway, Superintendent (resident—psychiatry).
Children's Orthopedic Hospital, Seattle. Capacity, 117; admissions, 1,423. Miss Lillian M. Thompson, R.N., Superintendent (1 resident).
Virginia Mason Hospital, Seattle. Capacity, 208; admissions, 6,078. Mr. John A. Dare, Administrator (resident—medicine).

WEST VIRGINIA

Hopemont Sanitarium, Hopemont. Capacity, 475; admissions, 409. Dr. David Salkin, Medical Superintendent (2 residents).
St. Joseph's Hospital, Parkersburg. Capacity, 147; admissions, 3,039. Sister M. Adelaide, R.N., Superintendent (1 intern).

WISCONSIN

Milwaukee Hospital, Milwaukee. Capacity, 359; admissions, 8,472. Rev. William G. Solt, Superintendent (1 intern).
St. Mary's Hospital, Madison. Capacity, 225; admissions, 6,657. Sister Mary Bernadette, R.N., Superintendent (intern, resident—OB).

ORGANIZATION SECTION

COUNCIL ON MEDICAL SERVICE AND PUBLIC RELATIONS

THE PURPOSES AND FUNCTIONS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED THE PUBLICATION OF THE FOLLOWING STATEMENT. J. W. HOLLOWAY JR., Acting Secretary.

The Council was authorized by the House of Delegates of the American Medical Association at its annual session in Chicago in June 1943. The members of the Council were immediately appointed by the Board of Trustees. Section 4 of chapter IX of the By-Laws provides that the duties of the Council shall be as follows:

"(1) To make available facts, data and medical opinions with respect to timely and adequate rendition of medical care to the American people;

."(2) to inform the constituent associations and component societies of proposed changes affecting medical care in the nation;

"(3) to inform constituent associations and component societies regarding the activities of the Council;

"(4) to investigate matters pertaining to the economic, social and similar aspects of medical care for all the people;

"(5) to study and suggest means for the distribution of medical services to the public consistent with the principles adopted by the House of Delegates, and

"(6) to develop and assist committees on medical service and public relations originating within the constituent associations and component societies of the American Medical Association.

"In the exercise of its functions, this Council, with the cooperation of the Board of Trustees, shall utilize the functions and personnel of the Bureau of Legal Medicine and Legislation, the Bureau of Medical Economics and the Department of Public Relations in the Headquarters Office."

The Council is also bound by the actions of the House of Delegates on the subject of medical care and its distribution, notably the platform adopted in 1937 as amended and amplified in subsequent years by the various resolutions and reference committee reports adopted by the House of Delegates.

In order to carry out these functions, the Council has organized as follows:

ORGANIZATION

Officers.—The Council shall elect annually:

A chairman.
A vice chairman.
A full time secretary.

An executive committee of three shall be created, which shall include the chairman, the Council member of the Board of Trustees and a third member to be chosen annually from the duly appointed or elected members of the Council on Medical Service and Public Relations. This committee shall exercise such functions as are delegated to it by the Council.

The central office of the Council is to be located in the office building of the American Medical Association in Chicago.

The functions of the Council outlined in the By-Laws are closely integrated and cannot well be considered separately. To carry them out, it is obvious that the Council must have adequate sources of information, maintain close contact with constituent associations and component societies, and establish close relationship with the already existing bureaus and departments of the Association.

The Council, therefore, subject to the approval of the Board of Trustees, has decided on the following methods of operation:

1. In carrying out the directive in the By-Laws as to relationship with the other bureaus and departments of the Association, the Council has established close collaboration (*a*) with the Bureau of Medical Economics, which has been asked and has expressed the willingness to do the research on many of the economic problems necessary for the Council's study, and which is well equipped to carry out such research; (*b*) with the Bureau of Legal Medicine and Legislation. Joint bulletins will be issued with that bureau on legislative matters. Attempt will be made to effect wider distribution and, if necessary, more frequent publication of such bulletins; (*c*) with the Department of Public Relations. The Council shall utilize the sources of information of this department, and joint bulletins may be issued from time to time with it and, if indicated, with other bureaus of the American Medical Association. All planning will be to avoid overlapping of functions and duplication of effort.

2. The Council on Medical Service and Public Relations has extended the sources of information of the American Medical Association on problems with which the Council is specifically concerned. Through its membership and by cooperation with constituent associations and component societies and the utilization of other facilities, the Council will disseminate such information toward effecting its objectives. The secretary of the Council, with its approval, will undertake such travel as may be necessary.

3. In order that constituent associations and component societies may be kept informed of the activities of the Council and of proposed changes in the status of medical care, and that the Council may be of assistance to those associations and societies, the Council has requested each state association to designate an existing committee or create a new committee to function with the Council on a state level.

Each state organization has also been requested to contact each component society in the state and ask it similarly to designate or form a committee to function in connection with the programs of the Council. Where such organization is feasible, it has been suggested that committees be created along the lines of congressional districts.

Such state and county committees have been urged to keep the Council informed of their local problems and activities.

State organizations also will be requested from time to time to conduct experiments in the various methods of medical care and to inform the Council of their results so that the Council may study and evaluate the experiments and transmit the information acquired to all concerned.

4. The Council feels that under its directive it is its duty to endeavor to evolve such modifications of our present system of medical care as may be necessary to cover all the people and be in accord with the traditions of American medicine as to high standards of medical care and the American tradition of free enterprise as already outlined in paragraph 1 of the Council's policies previously published. To accomplish this, study must be made of all economic, social and similar aspects of such care.

5. In order that the above program may be effectively carried out, the secretary of the Council, with the guidance of the Council in conformity with the above expressed relationships with other bureaus and departments, shall inform the profession through the various state organizations of all pending national legislation and bureau directives affecting the practice of medicine. It shall likewise be his duty, with the guidance of the Council, to arrange for medical representation at meetings and hearings pertaining to medical care, collaborating in the representation with other councils and bureaus of the American Medical Association that have an interest in this same subject.

6. The secretary is instructed, with the supervision of the Council and in collaboration with the Department of Public Relations, to disseminate information concerning the activities of the Council through the publications of the American Medical Association and the various state medical journals, and to prepare and release information on medical care.

The Council has already issued its Statement of General Policies, and it will act in accordance with those Policies and the above methods of functioning.

MEDICAL LEGISLATION

MEDICAL BILLS IN CONGRESS

Changes in Status.—S. 763 has passed the Senate and House, proposing to amend in several respects the Selective Training and Service Act of 1940. Among other things, this bill would direct the President to appoint a commission of five qualified physicians to examine the physical, mental and moral qualification requirements for admission to the Army, Navy and Marine Corps and to recommend to the President any changes therein which it believes can be made without impairing the efficiency of the armed services. This commission, it is contemplated, will consist of one Army officer, one Navy officer and three qualified civilian physicians not employed by the federal government. As passed by the House, section 1 of this bill concluded with the following proviso: *"Provided,* That no individuals shall be called for induction, ordered to report to induction stations, or be inducted because of their occupations, or by occupational groups, or by groups in any plant or institutions." The conference committee on the bill added to the foregoing proviso this exception: "except pursuant to a requisition by the land or naval forces for persons in needed medical professional and specialist categories." The recommendation of the conference committee was accepted by the House and Senate, and the bill is now before the President for executive action. H. R. 3687 has passed the House, a bill to provide revenue. It is estimated that as passed by the House this bill will produce revenue in the amount of $2,139,300,000 instead of the $10,500,000,000 as requested by the Treasury Department. Personal income taxes will be increased by $154,800,000, taxes on corporations by $616,000,000, various excise taxes by $1,201,700,000 and postal rates by $166,800,000. The credit for earned income will be eliminated, and the normal tax rate on individual incomes will be increased from 6 to 10 per cent. The victory tax has been eliminated. Section 112 of the bill will require many associations now exempt from federal income taxes under section 101 of the Internal Revenue Code to file annual informational returns with the Commissioner of Internal Revenue stating specifically the items of gross income, receipts and disbursements and such other information as the Commissioner may require. The pending bill does not contemplate that any tax at this time will be imposed on the income of associations now exempt, the return requirement being solely for the information of the Bureau of Internal Revenue. Exempt from this return requirement will be, broadly stated, religious, educational and charitable organizations. The new tax bill also provides for a special deduction for blind persons in the amount of $500.

SPECIAL SUBCOMMITTEE OF SENATE ON WARTIME HEALTH AND EDUCATION TO HOLD HEARING

The first field hearings of the Special Senate Subcommittee on Wartime Health and Education have been scheduled for December 16-18 in Pascagoula, Miss., Senator Claude Pepper, chairman of the subcommittee, announced on Monday. The hearing will be preceded by a four week investigation in Pascagoula and vicinity by staff investigators of the committee.

The Pascagoula study is one of a series from which the committee will "draw a national pattern of the nation's state of wartime health," Senator Pepper said. The investigations and hearings will establish facts which will be the basis of committee recommendations of remedial measures when the field series has been completed, he said.

The subcommittee on Wartime Health and Education was established by Senate resolution in June. It is charged with the responsibility of making "full and complete study and investigation . . . regarding the distribution and utilization of medical personnel, facilities and related health services" and "deficiencies in health and education among persons otherwise fit for service with the armed forces and persons otherwise fit to be employed to the best advantage in agriculture, industry and other activites, so as . . . best to promote the war and victory for our cause."

Pascagoula, Senator Pepper pointed out, is a production center which has grown "almost overnight" from a small community to "a crowded boom town." It presents most of the wartime health problems of the typical congested area, he said.

"Many of the state and federal agencies working in the Pascagoula area already have offered cooperation in making this field study thorough and successful," the senator said. "We feel that by sampling the nation's health in a number of these field studies we shall be in a position to report accurate and complete findings to the Senate and to recommend scientifically sound legislative remedies for the unsatisfactory conditions we discover."

Committee staff investigators arrived in Pascagoula Thursday of last week. They will study conditions in the fields of medical care, food and nutrition, housing and hospital and clinic facilities. This study will not deal with problems in education other than those directly related to health, Senator Pepper said. Other members of the committee are Senators Elbert D. Thomas of Utah, James M. Tunnell of Delaware, Robert M. LaFollette Jr. of Wisconsin and Kenneth S. Wherry of Nebraska. Randolph Feltus, staff director of the committee, is in charge of the investigation.

WOMAN'S AUXILIARY

Georgia

Mrs. Olin S. Cofer of Atlanta, president of the Woman's Auxiliary to the Georgia State Medical Society, indicated that the Georgia auxiliary will stress nutrition, tuberculosis, cancer and venereal disease education this year. She said "The auxiliary feels that health education is its most urgent responsibility, not only for the present war period, but for future generations."

The Georgia auxiliary awards a cup (the Mrs. James N. Brawner trophy) to the local auxiliary making the highest score on a carefully worked out plan of credits. There are eighteen worthwhile items on the standard of excellence.

Michigan

The seventeenth annual meeting of the Woman's Auxiliary to the Michigan State Medical Society was held in Detroit, September 20-22, with sixty-three delegates and forty-three guests attending. There were a number of social events, including the annual banquet, where Dr. H. H. Cummings, president of the Michigan Medical Society, spoke, stressing the need of unity at this time. Dr. F. E. Reeder, chairman of the advisory council, urged that doctors' wives be acquainted with legislative bills pending. Mrs. Eben J. Carey, national president, explained the Nurses Cadet Corps project, which the national auxiliary endorses as a project for immediate work.

Mrs. Gordon L. Willoughby, state president, presided over convention sessions. Twenty-two county presidents gave reports of the work done in their counties. The new officers elected are Mrs. John J. Walch, president; Mrs. H. L. French, president-elect; Mrs. L. C. Harnic, vice president; Mrs. R. G. Alter, treasurer; Mrs. Otto Hult, secretary, and Mrs. R. H. Frazier, director of the Student Loan Fund. In her inaugural address Mrs. John J. Walch urged the continuance of war service projects, registration of nurses, study of child delinquency and the need of the auxiliaries taking as a new project the Nurses Cadet Recruiting and keeping informed on medical legislation.

At the auxiliary's annual luncheon Mrs. Gordon L. Willoughby, retiring state president, presented a medical kit to Lieut. William E. Tracy for use in the Submarine Chaser P. C. 1139. Exhibits showing the results of the tuberculosis radio contest and the press books for the year were on display.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Personal.—Dr. Herbert S. Chapman, Stockton, has been appointed a member of the state board of medical examiners to succeed Dr. Fred R. DeLappe, Modesto, a member of the board since 1931 and president for a number of times.—— Dr. Charles H. Bulson, Napa, recently completed fifty years in the practice of medicine. He is a medical examiner for the draft board and chairman of the medical staff of Victory Hospital, Napa.——Dr. Alexander Simon, who has been senior medical officer at St. Elizabeths Hospital, Washington, D. C., for the past twelve years and associate professor of neurology at the George Washington University School of Medicine, has been appointed assistant medical director of the Langley Porter Clinic for Mental Diseases.

Surgical Prizes Awarded.—First prize in the San Francisco Surgical Society's annual prize essay contest recently was awarded to Capt. Sanford E. Leeds, M. R. C., for his paper entitled "The Effects of Occlusion of Experimental Chronic Patent Ductus Arteriosus on the Cardiac Output, Pulse and Blood Pressure of Dogs." Second prize went to Dr. Victor Richards, San Francisco, for his paper on "Refrigeration Anesthesia in Surgery." The San Francisco Surgical Society inaugurated the contest in 1942, announcing at that time that the first and second prizes were to be $150 and $100 respectively (THE JOURNAL, January 23, page 270). The authors were to be physicians in the field of general surgery and in the period of graduate training not more than six years removed from graduation from medical school.

Psychoanalytic Society Now Active.—The San Francisco Psychoanalytic Society, a group organized in 1942 but which became active only recently, held a meeting in the Ambassador Hotel, Los Angeles, October 23-24, under the presidency of Dr. Ernst Simmel, Los Angeles. The following program was presented:

Capt. Joseph Bierneff, M. R. C., Psychiatric Notes from an American Station Hospital in Australia.
Lieut. Comdr. E. C. Moloney (MC), U. S. Navy (subject not announced).
Dr. Jacob S. Kasanin, San Francisco, Neuroses of War Wives.
R. Nevitt Sanford, Berkeley, Optimistic and Pessimistic Attitudes Toward the War and the Peace.
Hon. Edward R. Brand, judge of the Los Angeles Superior Court, War and Crime.
Mrs. Susan A. Bernfeld, Patriotism of Prison Inmates.
Siegfried Bernfeld, Ph.D., San Francisco, Psychology of Witnesses in Rioting and Lynching.
Anna Maenchen, Ph.D., San Francisco, Superego Development in Wartime.
Dr. Simmel, Remarks on War and Mental Hygiene.
Dr. Malcolm H. Finley, San Francisco, Blood Pressure and Its Relation to Masochism and Suicide.
Dr. May E. G. Romm, Beverly Hills, Aggression in Fetishism.
Dr. Otto Fenichel, Los Angeles, The Manic Depressive Mental Disorders.
Dr. Donald A. Macfarlane, Berkeley, The Psychoanalyst's Personal Attitude in Relation to the Phenomenon of "Acting Out."

The society has pledged itself to disseminate knowledge about psychoanalysis in California and to train medical psychoanalysts under the auspices of the Topeka Institute for Psychoanalysis, located in Topeka, Kan., with branches in Los Angeles and San Francisco. Other officers of the San Francisco Psychoanalytic Society are Dr. Bernhard Berliner, San Francisco, vice president, and Dr. Kasanin, secretary-treasurer.

COLORADO

Dr. Clark Lectures on Tropical Diseases.—Dr. Herbert C. Clark, director of the Gorgas Memorial Laboratory, Panama, lectured in Denver, November 29-30, under auspices of the John and Mary R. Markle Foundation and the National Research Council. The titles of his lectures were "Malaria: Precautions in the Unsanitated Areas of the Tropical Lowlands" and "Distribution and Complication of Amebic Lesions Found in One Hundred and Eighty-Six Postmortem Examinations."

Personal.—Mr. Walter J. Bailey has resigned as superintendent of the Memorial Hospital, Colorado Springs, formerly known as the Beth-El General Hospital and Sanatorium.—— Dr. Edward R. Mugrage, president-elect of the Colorado State Medical Society, was awarded one of two Alumni Recognition Medals given by the Alumni Association of the University of Colorado, October 23, "on the basis of his scientific achievements, and particularly because of his interest in, and assistance to, many generations of students in the medical school of the university."——Dr. Thomas E. Carmody, Denver, has been elected a member of the honor society of the American Academy of Ophthalmology and Otolaryngology.

CONNECTICUT

Secretary Named for Alumni of Alcohol Studies.—In an effort to maintain contact with the alumni of the first School of Alcohol Studies at Yale University, New Haven, Rev. Wayne W. Womer, 59 Lexington Road, West Hartford, has been named secretary. He will keep in touch with the alumni of the school, which recently completed a six weeks session, and compile a record of their activities. The School of Alcohol Studies, which opened on July 8 under the direction of Elvin M. Jellinek, Sc.D., of the Yale Laboratory of Applied Physiology, was said to be the first formal school in the academic history of the United States to study the consequences of alcohol (THE JOURNAL, June 12, p. 454). The school has undertaken a study of children of alcoholic parents, psychotic parents and normal parents who were brought up in foster homes. This work is financed by a grant-in-aid from the Carnegie Corporation in New York and was begun by the late Barbara S. Burks, Ph.D., but will be continued by Anne Roe, Ph.D., secretary of the psychologic section of the New York Academy of Sciences, who has joined the staff of the School of Alcohol Studies. Selden Bacon, Ph.D., assistant professor of sociology at Yale, is a new member of the research staff. The alcohol school plans to publish an alumni bulletin twice a year.

DISTRICT OF COLUMBIA

Personal.—Dr. Philip S. Owen, technical aid to the subcommittee on medical food requirements, advisory to the Office of Price Administration, has been named technical aid to the division of medical sciences, National Research Council, Washington, D. C., to succeed Dr. George K. Anderson, now Secretary of the Council on Foods and Nutrition of the American Medical Association.—— Dr. Winfred Overholser, medical superintendent of St. Elizabeths Hospital, has been appointed associate editor of *Medical Annals*, official publication of the Medical Society of the District of Columbia.

GEORGIA

Physician Observes Ninety-Seventh Birthday.—Dr. Thomas D. Longino, College Park, observed his ninety-seventh birthday, September 7. Dr. Longino graduated at the Medical College of Georgia, Augusta, in 1870 and at the Jefferson Medical College of Philadelphia in 1882.

Quarantine on Patients with Communicable Tuberculosis.—The state department of health has established a quarantine on residents of Georgia suffering from communicable tuberculosis who refuse to obey medical instructions, newspapers reported, November 14. Violators of the order, which was adopted on November 12 by the state board of health, will be punished for a misdemeanor, it was announced.

ILLINOIS

Change in Health Officers.—Dr. Fred O. Tonney, formerly director of laboratories and research of the Chicago Board of Health, has been named health officer of district number two, comprising Lake, McHenry and Boone counties, with headquarters in Woodstock.

Society News.—The Whiteside County Medical Society will be addressed at Sterling, December 9, by Drs. Donald D. M. Cook and Muriel K. Fuller, Chicago, on "The Cook-Fuller Theory of the Cause of Gastric and Duodenal Ulcer: Its Implications on the Medical and Surgical Treatment of Ulcer."

Chicago

First Neighborhood Forum on Cancer.—On December 1 the first neighborhood public forum on cancer, arranged by the Chicago Cancer Committee, Inc., was held in the Jewish People's Institute with Dorph Brown, dean, Herzl Junior College, acting as moderator and Dr. Ludvig Hektoen, chairman of the cancer committee, presenting the introductory statement. Other speakers were:

Dr. Bowman C. Crowell, The Course of Cancer.
Dr. Josiah J. Moore, The Causes of Cancer.
Dr. Herbert E. Schmitz, The Diagnosis of Cancer.
Dr. John A. Wolfer, The Curability of Cancer.
Dr. Frederick W. Merrifield, What the Patient Can Do About It.

Personal.—Dr. Charles Edward Remy has been returned to inactive duty status by the U. S. Public Health Service to develop plans that are arising for postwar projects in the hospital field.——Harold C. Wiggers, Ph.D., assistant professor

of physiology at the Western Reserve University School of Medicine, Cleveland, has been appointed associate professor of physiology at the University of Illinois College of Medicine. ——Mr. Homer F. Sanger, in charge of hospital activities of the Council on Medical Education and Hospitals, American Medical Association, will retire from the staff on January 1. Mr. Sanger has been with the Council for more than twenty-four years, with the exception of a short time in 1921 when he served as superintendent of the Central Free Dispensary.

INDIANA

Treasurer for Forty Years.—Dr. Charles Hupe was recently given a testimonial dinner in recognition of his sixty years as a practicing physician in Lafayette. Dr. Hupe, who is 86 years of age, has been treasurer of the Tippecanoe County Medical Society for more than forty years. He is considered the county's oldest practicing physician.

Dr. Donchess Named Chief Surgeon of Steel Corporation.—Dr. Joseph C. Donchess has been appointed chief surgeon of the Gary Steel Works, where he has been assistant surgeon, and the Gary Sheet and Tin Mill, according to the Carnegie-Illinois Steel Corporation. He succeeds the late Dr. Frank W. Merritt. Dr. Donchess, who graduated at the University of Pittsburgh School of Medicine in 1932, has been assistant surgeon on the Gary Works medical staff since January 1937.

IOWA

Harlan Wood Goes to Minnesota.—Harlan G. Wood, Ph.D., since 1936 research assistant in bacteriology at the Iowa State College of Agriculture and Mechanic Arts, Ames, has been appointed associate professor of physiologic chemistry at the University of Minnesota. He will be responsible for studies on the biochemical aspects of the virus-host relationship in poliomyelitis in the research program now being conducted at the University of Minnesota under the auspices of the National Foundation for Infantile Paralysis. Dr. Wood received the 1942 Eli Lilly Company research award for his contributions to bacterial physiology (THE JOURNAL, February 13, page 531).

LOUISIANA

Honor Society Holds Key Ceremony.—On November 9 the annual ceremony of presentation of keys to the newly elected members of the Circle, honorary scholastic society of the Louisiana State University School of Medicine, New Orleans, was held. Dr. Chester A. Stewart, professor and director of the department of pediatrics, who was chosen honorary member for the year, gave an address entitled "Medicine Marches On." New members of the society who were presented with keys are Miss Evelyn Katz, Alfredo Perez, Ellis Mischle, Sydney Lewis and John Signorelli of the senior class and James Decuers, Miss Anna Costanza and Elliott Roy of the junior class. After the ceremony a banquet was held in honor of Dr. James D. Rives, clinical professor of surgery, who is retiring as chairman of the faculty advisory committee of the society.

Medical Ethics.—The Louisiana State University Society of Medical Sciences conducted a round table discussion on "Medical Ethics," November 15, at the Louisiana State University Medical Center, New Orleans. The session aimed to show the practical problems in ethical relationships encountered by the practitioner. Among the speakers were Drs. Edgar Hull, Isidore Cohn and Edwin L. J. Zander, all members of the faculty at Louisiana, representing the specialties of medicine, surgery and obstetrics-gynecology. Herbert Derman, senior medical student and president of the society, acted as moderator. The discussion covered such questions as fee splitting, professional secrecy, abortion, the position of the Catholic doctor on contraception, the extent and abuses of professional courtesy, obligations of the physician, advertising, euthanasia and establishment of fees.

MASSACHUSETTS

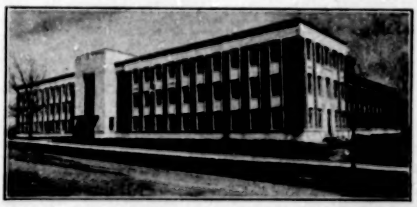
Gonococcus Culture Service Inaugurated.—The Massachusetts Department of Public Health announces a new gonococcus culture service to physicians of the state. In the department's opinion the utilization of cultural methods will be of aid in the control of certain types of gonococcic infections. Physicians wishing to use the service should request mailing kits from the bacteriologic laboratory, Room 527, State House, Boston. All containers will be stamped with an expiration date and if not used by that time should be returned to the laboratory, whereupon fresh outfits will be sent to the physician.

Children's Center Fills Need.—The Children's Center in Boston, established in January 1943 under the auspices of the Judge Baker Guidance Center and aided by a grant from the Rockefeller Foundation, is proving to be a valuable organization, according to the *New England Journal of Medicine*. During the first half year of its existence applications were received for nearly 250 children, stemming from thirty-seven agencies, private physicians and direct neighborhood contacts. The center was established in Roxbury near a low income community, as an independent organization with its own staff, under the direction of Dr. Marian C. Putnam and Mrs. Beata Rank. Its purpose was to provide day nursery care and psychiatric consultation and treatment for infants and preschool children. It has been furnishing day nursery care, which is open to a group of 30 to 35 children with an age range from infancy to 5 years, inpatient care for a few children whose residence at home is temporarily inadvisable, therapeutic and educational work with parents and children, a consultation service available to the whole community, and facilities for the training and teaching of students in the various fields of child care. In this last respect, teaching programs are being offered for various professional people—social workers, nursery school teachers, volunteers and students in child care and, ultimately, psychiatrists and pediatricians. A special grant from the Rockefeller Foundation helps to open the opportunity for study and research.

MICHIGAN

New Department of Tropical Diseases.—Dr. Lowell T. Coggeshall, professor of epidemiology, has been appointed professor and chairman of the newly organized department of tropical diseases at the School of Public Health, University of Michigan, Ann Arbor. The new arrangement divides tropical diseases from the old department of epidemiology, of which Dr. Thomas Francis Jr. is chairman.

New School of Public Health.—The University of Michigan School of Public Health, Ann Arbor, is now completed and officially functioning. A series of dedicatory addresses given primarily for the benefit of the students at the school will constitute the official dedication of the school, the first of which was delivered by Thomas Parran, surgeon general of the U. S. Public Health Service, during the recent Inter-American Conference of Schools of Public Health at Ann Arbor on "The Service of the Public Health Schools to the Nation's Health." The building and its equipment cost $750,000, of which $400,000 was provided by the W. K. Kellogg Foundation, $300,000 by the Rockefeller Foundation and $50,000 by the National Foundation for Infantile Paralysis. The site was offered by the university. The school embraces a three story



New School of Public Health.

section and two wings, forming a U. The U is closed by a service and animal unit, thus completing a rectangle. The three story section is devoted to academic instruction in the fields of public health practice, epidemiology, physiologic hygiene, child health, public health statistics, nutrition, mental health, public health dentistry and health education. An auditorium seats 200 students and is adjoined by a museum for health education. There is a library on the third floor and a series of conference, seminar and teaching rooms for programs in continued education and postgraduate service. The south wing is devoted to laboratories for epidemiology and public health laboratory service, the first floor being devoted to virus diseases, the second floor to parasitic and tropical diseases. The north wing is designed for services in environmental health; industrial health laboratories are on the first floor and public health engineering laboratories on the second floor.

MISSOURI

Medical-Dental Bowling League.—The Jackson County Medical-Dental Bowling League held its first meeting of the season on October 28. Officers include Drs. Oliver S. Gilliland, Kansas City, president and Chester M. Counsell, Kansas City, secretary.

Changes in the Faculty at Washington University.—Announcement is made of the following promotions in the faculty of Washington University School of Medicine, St. Louis, among others:

Dr. Edward G. McGavran to professor of public health administration and acting head of the department of public health.
Dr. Margaret G. Smith to associate professor of pathology.
Dr. Frederick O. Schwartz to associate professor of clinical ophthalmology.
Dr. Gerty T. Cori to associate professor of research biologic chemistry and pharmacology.
Lieut. Col. Earl H. Perry, M. C., U. S. Army, retired, to associate professor of military science and tactics.
Drs. Carl G. Harford and John R. Smith to assistant professor of medicine.
Drs. Paul O. Hageman, Samuel B. Grant, Walter Fischel, Alfred Goldman, Arthur Strauss and Llewellyn Sale to assistant professor of clinical medicine.
Dr. Adolph H. Conrad to assistant professor of clinical dermatology.
Drs. William O. Russell and Paul A. Wheeler to assistant professor of pathology.
Drs. Howard Rommell Hildreth and Carl C. Beisbarth to assistant professor of clinical ophthalmology.
Hiromu Tsuchiya, Sc.D., to assistant professor of parasitology.

New appointments to the faculty include those of Dr. Thomas Dale Stewart, Washington, D. C., as visiting professor of anatomy, Dr. Samuel H. Gray, St. Louis, as associate professor of pathology, Dr. Hans B. Molholm, Akron, Ohio, as assistant professor of psychiatry and Dr. Harry W. Wiese, St. Louis, as instructor in clinical medicine. The following members of the staff have retired recently with the titles indicated: Dr. Harry W. Lyman, professor emeritus of clinical otolaryngology, Dr. Frederick E. Woodruff, associate professor of clinical ophthalmology, Drs. Walter Baumgarten and Louis H. Hempelmann, assistant professors emeritus of clinical medicine, Dr. Adolph G. Schlosstein, assistant professor emeritus of clinical obstetrics and gynecology, and Dr. Thomas B. Pote, lecturer emeritus in pathology. Dr. David McK. Rioch has resigned as professor of neurology at the school to become director of research at the Chestnut Lodge Sanitarium, Rockville, Md.

NEBRASKA

First "Quick Treatment" Venereal Hospital Opened.—On November 1 the first state-federal "quick treatment" hospital for venereal patients opened at the former home of the Salvation Army Booth Memorial Hospital in Omaha. A federal grant of $100,000 was reported to assist in the financing of the hospital.

NEW YORK

Personal.—Drs. Henry L. Bibby and Frederick W. Holcomb, Kingston, have been named in charge of a new committee for Russian War Relief of Kingston.——Dr. Harry A. LaBurt, medical superintendent of the Harlem Valley State Hospital, Wingdale, has been named to a similar position at Creedmore State Hospital, Queens Village. Dr. Jesse L. Bennett has been acting superintendent and will remain there as first assistant, it is reported.

New York City

Personal.—Students of the School of Nursing of St. Luke's Hospital presented a sum of money to the medical library of the hospital for the purchase of books as a memorial to the late Dr. Theophilus P. Allen, associate attending physician, who died January 27.——Dr. Edward I. Salisbury has been made medical director of United Fruit Company to succeed Dr. Roland C. Connor, executive vice president.

Finances of Physicians' Home.—The annual financial statement of the Physicians' Home for the fiscal year started Oct. 1, 1942 and ended Sept. 30, 1943 shows total assets of $62,928.38, with $48,689.54 of this a general fund surplus and $14,238.84 in restricted funds. During the year the home received $13,558.76, of which $12,015.16 was from dues and contributions and $1,543.60 income from investments. It expended $5,988.88, the care of guests taking $5,295.65.

Dr. Cowles Wins Appeal in License Revocation.—The revocation of the license to practice medicine of Dr. Edward Spencer Cowles for one year was set aside by unanimous vote of the appellate division, third department, the New York *Sun* reported, November 11. Dr. Cowles's license had been suspended on April 16 by the board of regents, which found him guilty of "fraud and deceit" in the conduct of his Body and Mind Foundation, specifically for permitting Rudolph (Robert) Rebold to work at the Body and Mind Clinic though he had no state license (THE JOURNAL, May 1, p. 50). The court ruled in the recent decision that Dr. Cowles was justified in believing that Rebold was licensed.

Fugitive Physician Must Return to Serve Sentence.—Dr. Louis G. Small, who early this year was the subject of a countrywide search and who was subsequently arrested in Eastman, Ga., on charges of practicing medicine there without a license, a misdemeanor in Georgia, must return to New York to serve a three to six year jail sentence in accordance with a ruling by the Georgia Supreme Court. Dr. Small was sentenced after his General Sessions conviction for operating an abortion mill with two other physicians (THE JOURNAL, May 15, p. 188). According to newspaper reports, when New York detectives went to Eastman to return Dr. Small to New York, residents there supported the physician because of the shortage of doctors in the town and threatened violence to the detectives. After the physician's subsequent arrest in Eastman on charges of practicing without a license, Governor Ellis Arnall of Georgia granted extradition to New York, it was stated, but a superior court judge in Eastman blocked the proceedings by ruling that the city court of Eastman had a prior claim. On November 10 the Georgia Supreme Court ruled that the Eastman court must waive its right to try Small on the misdemeanor charge. In arguments before the Supreme Court it was pointed out that Georgia authorities had made no effort to proceed against the doctor and that he was allegedly still practicing medicine there.

NORTH DAKOTA

District Health Office Abandoned.—The district health office which has been maintained at Valley City for six years has been discontinued as the result of the action by the board of county commissioners. The board is said to have repudiated a promise made by the state authorities to sign a contract contemplating the appropriation of funds to carry on a county program. The city of Valley City had voted cooperation and funds but gave the state health department a release from its arrangements following the county commissioners' action of refusal to enter the program. This change results in Dr. Elvin L. Sederlin, former Fargo City health officer and lately district health officer at Valley City, being transferred to Bismarck.

OHIO

Annual Meeting to Be in Columbus.—The Ohio State Medical Association has decided to present an "old fashioned" three day annual session at Neil House, Columbus, May 9-11. A real medical assembly will be presented unless conditions resulting from the war become especially acute.

New Tuberculosis Society.—The Cleveland Society of Tuberculosis Physicians was recently organized with Dr. Raymond C. McKay as president and Dr. William F. Hulse as secretary-treasurer. The purposes of the new group are to support the local antituberculosis program and to maintain high standards of treatment.

Personal.—Rev. J. A. Diekmann has resigned as superintendent of the Bethesda Hospital, Cincinnati, after serving as a member of the staff for thirty-two years. He has been succeeded by Albert N. McGinnis, business manager, who will combine the positions of superintendent and business manager.——Dr. and Mrs. Hugh R. Brownlee, Cleveland, observed their fiftieth wedding anniversary, November 7.

Graduate Course.—The tenth annual postgraduate course of the University of Toledo, Toledo, was held November 5. This year the meeting was dedicated to the memory of the late Dr. Francis W. Alter, president of the Toledo Academy of Medicine in 1923. Speakers were Dr. Lyman Weeks Crossman, New York, on "Refrigeration Anesthesia for Extremity Surgery," "Preservation of Traumatized and Devitalized Tissues" and "Case Reports—Operative and Nonoperative Treatment" and Dr. William A. Sodeman, New Orleans, "Medical Treatment for Peptic Ulcer," "The Protein Picture of Amebiasis" and "Management of the Nephritic Patient."

TENNESSEE

Society News.—The Middle Tennessee Medical Association was addressed at Mount Pleasant, November 11, among others by Dr. Samuel S. Riven, Nashville, on "Coronary Occlusion," Dr. Amos Christie, Nashville, "Recent Advances in Immunization Procedures in Children" and Capt. Frederick R. Brown, M. C., A. U. S., "Allergy in Relation to Flying." A symposium on burns was a feature of the meeting.——Dr. Herbert Acuff, Knoxville, discussed "Carcinoma of the Cervix and Breast" before the Knox County Medical Society, November 23.

TEXAS

Personal.—Dr. and Mrs. David A. Mann observed their fiftieth wedding anniversary in Beaumont, October 22.——Dr. Augustus D. Cloyd Sr., Omaha, medical director of the Woodmen of the World, has been appointed acting superintendent of the Woodmen of the World War Memorial Hospital, San Antonio.

State Society Forms Speakers Bureau.—Fifteen Councilor Districts of the State Medical Association of Texas have selected a group of speakers under the direction of Dr. Charles S. Venable, San Antonio, to function as a speakers bureau, principally to combat socialized medicine. The men selected will be available by county medical societies for addresses before all groups of men or women.

VERMONT

Personal.—Dr. William J. McNamara, Fair Haven, has been elected supreme physician of the Knights of Columbus; in January Dr. McNamara will take up residence in New Haven, Conn., national headquarters of the order.

University News.—Dr. Louis S. Goodman, professor of pharmacology and physiology at the University of Vermont College of Medicine, Burlington, addressed the Chittenden County Medical Society, December 2, on "The Advancing Frontiers of Medical Therapy." Dr. William Dameshek, Boston, delivered the Osler Clinical Society Lecture at the university, November 9, on "Role of the Spleen in Disorders of the Blood." He also addressed the student body on "Etiology, Diagnosis and Therapy of Anemias." Dr. Douglas S. Riggs, New Haven, Conn., gave an Osler Clinical Society Lecture, November 18, on "Biochemical Aspects of Thyroid Disease."

WASHINGTON

New Venereal Treatment Center.—Dr. Fred W. Harb, U. S. Public Health Service, has been assigned as medical director of the new Seattle Treatment Center for women with venereal diseases. The Florence Crittenton Home will be leased by the society as a headquarters for the center.

Hospital News.—The Longview Memorial Hospital, Longview, recently purchased by the Sisters of St. Joseph, has been renamed the St. John's Memorial Hospital. The hospital had been closed on July 1. December 1 was set as the tentative date for opening after alterations had been completed.

Society News.—Dr. John F. Fiorino, Everett, was elected president of the Washington State Obstetrical Society at its meeting in Seattle, October 2, Dr. David H. Johnson, Tacoma, vice president and Dr. Henry H. Skinner, Yakima, secretary-treasurer. Among the speakers at the dinner were Capt. Francis L. McPhail, M. C., A. U. S., on "Further Observations on the Use of High Fluid Intake in the Treatment of Toxemias of Pregnancy" and Buell S. Bindshedler, assistant surgeon, U. S. Public Health Service, reserve, "Caudal Anesthesia."——The Walla Walla Valley Medical Society, as guests of the Veterans Administration Facility, Walla Walla, was addressed in November by Drs. James R. Deagen on "Observations of the Kenny Treatment of Infantile Paralysis," Frederick B. Nather, "Diagnostic Problems in Pulmonary Tuberculosis" and Ernest M. Tapp, "Food Poisoning," all of the Veterans Administration.——The King County Medical Society will be addressed January 3 in Seattle by Lieut. Comdr. Walter L. Voegtlin (MC), U. S. Naval Reserve, on "New Naval Hospital at Pearl Harbor (illustrated)" and Lieut. Comdr. John P. McVay (MC), U. S. Naval Reserve, "With the Marines in Guadalcanal."

WEST VIRGINIA

Basic Contract Adopted for Medical Service Plan.—The central state committee of the West Virginia State Medical Association and a group representing hospital service plans now operating in the state have agreed on a basic contract to be used by component societies in the application of regional nonprofit medical service plans (THE JOURNAL, October 16, p. 430). No attempt was made by the committee to draft a contract that can be used in its entirety by county or area groups organized to provide medical service. Instead the committee has presented only a suggested form that can be amended or corrected to meet local needs, making it possible for one fee schedule suitable for one locality to be revised to meet conditions existing in another. The project to launch these regional nonprofit medical services was submitted to the council of the state medical association at its meeting of September 29 and approved the following day. They will be operated by group hospital service with the joint supervision of an advisory committee elected by the county medical society and a central state committee appointed by the state medical association. A number of component societies have already taken steps to organize their plans.

GENERAL

Annual Forum on Allergy.—The sixth annual forum on allergy will be held at the Statler Hotel, St. Louis, January 22-23. Fifteen study groups will be available to cover the various specialties, the program to include lectures, motion pictures, demonstrations, symposiums and panel discussions.

Hospital Warns Physicians of Fraudulent Staff Member.—St. Vincent's Hospital, Los Angeles, writes that a person using the name "John E. O'Malley, M.D." has been traveling about the country obtaining loans of money under false pretenses. The hospital states that O'Malley claims to be in its pathologic department and presents engraved cards showing his name with the written identification of the hospital. The man is described as being small, dark and refers to himself as a "Filipino doctor," claiming to have had an Irish grandfather. He always appears to be well dressed and is apparently well educated. His story is usually plausible when he requests a loan, stating that he is temporarily out of funds. Inquiries from the New England states have been received by St. Vincent's Hospital.

Mac Cahal Joins Southwestern Medical Foundation.—Mac F. Cahal, executive secretary of the American College of Radiology, Chicago, has been appointed executive officer of the Southwestern Medical Foundation, Dallas. Mr. Cahal will take over his new work when his successor with the American College of Radiology has been selected. In 1937, after serving five years as executive secretary of the Sedgwick County Medical Society, Wichita, Kan., Mr. Cahal filled a similar position with the newly created Inter-Society Committee for Radiology, representing the American Roentgen Ray Society, Radiological Society of North America, American Radium Society and the American College of Radiology. When this committee was discharged in 1939 he assumed his current position with the American College of Radiology.

Annual Meeting of Nutrition Foundation.—Grants totaling $396,040 for research in nutrition have been made by the Nutrition Foundation, Inc., during the two years that the group has been in operation, it was announced at its second annual meeting in New York, November 12. These grants, providing for studies in many fields of nutrition and seeking improved living conditions through dietary advances, have been made to forty-one universities, medical centers and other research institutions throughout the United States and Canada, it was announced. The board of trustees at the meeting approved twelve new grants in aid amounting to $29,900 and thirteen renewals of earlier grants amounting to $36,000. The new grants include the following projects:

Paul R. Burkholder, Ph.D., Yale University, New Haven, Conn., nutrient values of soybeans.

Leopold R. Cerecedo, Ph.D., Fordham University, New York, growth, reproduction and lactation in rats on highly purified diets.

Max S. Dunn, Ph.D., University of California, Los Angeles, microbiologic analysis of amino acids.

Paul F. Hahn, Ph.D., University of Rochester School of Medicine and Dentistry, Rochester, N. Y., absorption of iron compounds in anemia.

Robert S. Harris, Ph.D., Massachusetts Institute of Technology, Cambridge, Mass., the nutritive role of hydroxy fatty acids.

Howard B. Lewis, Ph.D., University of Michigan, Ann Arbor, experimental lathyrism (toxic vetches).

Hubert S. Loring, Ph.D., Stanford University, Calif., pyrimidine nucleosides or nucleotides as growth factors.

Dr. De Witt Stetten Jr., Columbia University, Morningside Heights, N. Y., carbohydrate metabolism.

Dr. Robert R. Struthers, McGill University Faculty of Medicine, Montreal, Que., nutrition in relation to relapses in rheumatic fever.

Dr. Josef Warkany, University of Cincinnati College of Medicine, diet and congenital malformations.

Wilfred W. Westerfeld, Ph.D., and Albert B. Hastings, Ph.D., Harvard University, Cambridge, Mass., pyruvate metabolism.

The Nutrition Foundation, supported by the food industry as a contribution to the well-being of the American public, has in its first two years received $1,278,000 to carry on its work.

PUERTO RICO

Medical Society Encourages Reading.—The fortieth annual meeting of the Associacion Medica of Puerto Rico will be held in the assembly hall of the School of Tropical Medicine, San Juan, December 10-12. The association, through its committee of library, plans to establish an annual observance to be called "Day of the Book" to emphasize before medical and public populations the need of reading for educational purposes. On this day the daily press will publish "book notice" items of the most important books, and the price of all volumes will be reduced for the day in the book stores. Donations of books to libraries will be made by individuals, scientific and other groups, book stores and literary societies.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 23, 1943.

Control of Advertisements of Proprietary Medicines

Blatant claims to cure all sorts of diseases made in the newspaper advertisements of proprietary medicines have long been a scandal. At last, this practice is to be checked. The Newspaper Proprietors Association has unanimously adopted the following rules: 1. No advertisement will be accepted for any medicine or treatment which is claimed to be effective in Bright's disease, cancer, tuberculosis, diabetes, epilepsy, fits, locomotor ataxia, disseminated sclerosis, osteoarthritis, spinal, cerebral and venereal diseases, lupus or paralysis or for preventing any of these ailments; for the cure of amenorrhea, hernia, blindness, rheumatoid arthritis or any ailment of the auditory system; for procuring miscarriage; for the treatment of habits associated with sexual indulgence, or for any ailment connected with these habits. 2. No advertisement will be accepted from any advertiser who by printed matter, orally or in his advertisement, undertakes to diagnose any condition or to receive a statement of any person's symptoms with a view to advising or providing for treatment by correspondence. 3. No advertisement will be accepted containing a testimonial other than one limited to the actual views of the writer, or any testimonial given by a doctor other than a recognized British medical practitioner. 4. No advertisement will be accepted containing illustrations which are distorted or exaggerated to convey false impressions. 5. No advertisement will be accepted which may lead persons to believe that the medicine emanates from any hospital or official source, or is any other than a proprietary medicine advertised by the manufacturer for the purpose specified, unless the advertising agent submitting the copy declares that the authority of such hospital or official source has been duly obtained.

These rules are now in operation in all the London morning, evening and Sunday newspapers. Also all advertisements will be submitted to medical scrutiny and the products advertised to chemical analysis if this is considered necessary. This is the first time leading newspapers have unanimously laid down and insisted on a standard of control over claims made in advertisements.

Germans Bomb Another Hospital Ship

The latest German outrage in this war is the bombing of another hospital ship. Survivors of the hospital ship *Newfoundland*, which was set on fire by German bombs off Salerno on September 13 during the early stages of the battle there, have arrived at a Scottish port. At the time of the attack there were no wounded on board, but six nurses, all the doctors and the ship's officers—twenty-three in all—were killed. A dental surgeon escaped. The British seamen who were landed emphasized that, in accordance with the Geneva convention, the ship carried all her lights and could not have been mistaken for other than a hospital ship. The ship entered Salerno harbor to pick up the wounded but had not had time to embark any when German raiders launched heavy attacks on all shipping in the harbor. The ship was ordered to move out of the harbor, clear of other shipping. The attack which finished it came the next morning. All the lights were on, and the Red Cross was clearly visible. Twice raiders swooped down, and bombs fell. One plane came a third time and released an aerial torpedo which hit the deck. Fierce fires broke out and all the lifeboats on the port side were quickly ablaze. Orders were given to abandon ship, and efforts were concentrated on removing the sick, many of them stretcher cases. Only two lifeboats could be lowered, but other hospital ships came to the rescue. An attempt was made to take the *Newfoundland* in tow, but she could not be saved.

Gifts to Royal College of Surgeons

An immediate gift of $500,000 for endowment of the department of pathology and the establishment of a chair of human and comparative pathology has been made to the Royal College of Surgeons by Mr. W. H. Collins, who has also made provision in his will for another $500,000 for endowment of the department of anatomy and to establish a chair of human and comparative anatomy. His gifts are inspired by gratitude for recovery from a dangerous illness after three operations performed by the president of the college, Sir Alfred Webb-Johnson. Mr. Collins also wishes to help in the restoration of the buildings to their unique position in the surgical world after the grievous damage done by German bombs. The museum of the college, the greatest anatomic and pathologic collection in the world, was based on the famous collection of John Hunter. It is hoped that the new chairs of human and comparative anatomy and pathology will help to counteract the narrowing effect of specialization in present day research.

The Hospital Physicists Association

The latest association connected with medicine—the Hospital Physicists Association—recently held its inaugural meeting, which was attended by thirty-seven physicists from all over the country. The aim was to discuss a branch of scientific work which has grown up mainly in recent years. At the meeting Dr. H. T. Flint discussed technic with various radium gram units; Prof. F. L. Hopwood discussed betatron; Prof. Gilbert Stead, teaching for the diplomas, and Prof. Sidney Russ, professional equipment of a hospital physicist. Professor Russ stated that the first full time appointment of a hospital physicist was made thirty years ago. Today there are between fifty and sixty physicists engaged in hospital work or in medical research. It was arranged for meetings to be held at least three times yearly.

A Naval Surgeon's Bravery

With a gale blowing, Surg. Lieut. M. J. Hood risked his life by jumping from the ice covered deck of his ship to another to attend to 81 wounded. While his ship was on convoy escort duty last winter a signal was received from another escort ship asking for medical attendance for wounded. Weather conditions made it impossible to get boats away, and the only alternative was for one ship to go alongside the other. This was done, but owing to wind and swell it was dangerous for the ships to remain together for more than a few seconds. As the vessels, both covered with ice, closed, Hood jumped—an act which might have cost him his life. Then for thirty hours he worked unceasingly among the wounded. His operating table was the seamen's mess deck. To help him keep steady as the ship pitched and rolled, two men supported him as he worked. He has been awarded the D.S.C.

Grandson of Sir Thomas Barlow Appointed to His Hospital

Sir Thomas Barlow, pediatrician, has recently celebrated his ninety-eighth birthday. His grandson Dr. Andrew Barlow has just been appointed house surgeon to the Hospital for Sick Children, Great Ormond Street. It was at this leading British children's hospital that his grandfather did much of the pediatric work which made him famous.

BUENOS AIRES

(From Our Regular Correspondent)

Oct. 8, 1943.

New Laws on Preparation and Sales of Drugs

New laws have recently been passed in Argentina concerning the preparation and sale of drugs. A department for the control of specialized drugs and a national committee in charge of the enforcement of some of the laws were recently established. The new department and committee are organized under the National Department of Hygiene. The committee (Comisión de Arancel y Contralor de Productos Medicinales) consists of members of the National Department of Hygiene, pharmacists and representatives of manufacturers of drugs and biologic products. All preparations will be under scientific control of the committee.

The salaries of professional men and women and technicians who prepare these products as well as salaries of other personnel in the field and the sales prices of the products will be determined by the board of directors of the committee. The salaries and prices are to be fixed in relation to the cost of the substances used in the products and the expenses of their preparation.

The profits for manufacturers and sellers are limited as follows: Twenty per cent based on the actual cost of the drug for manufacturers, 30 per cent for pharmacists and 13 per cent for drug stores. The percentages of profit will be calculated on a progressive scale in relation to costs. Importers will obtain a 6 per cent profit. The unit price of sale to the public will be declared on the containers of the drugs and must remain unchanged. The fixed prices will be uniform throughout the country. The greatest allowance for advertising expenses is 20 per cent of the total amount of all expenses. A 20 per cent reduction in the price of biologic preparations will be allowed to hospitalized patients, but the reduction is not allowed for other drugs. New specialized drugs of formulas similar to those of others previously registered are unacceptable. The scientific formula and therapeutic value of specialized drugs and specialized products which have been previously accepted will be reviewed for reapproval or rejection. Specialized biologic laboratories will be under the supervision of specialized physicians, veterinarians or biochemists who have been previously registered in the National Department of Hygiene, acting as technical directors. Information on the expenses of a product and the price wanted by manufacturers must be provided to the National Department of Hygiene together with drugs which are sent to the department for examination.

The commercial names given to the preparations may not indicate special effects of the drug on a given organic function. Words such as "pure," "very pure" and "harmless" may not be used on labels to describe the drugs. Perishable preparations must have on outer and inner labels the dates of preparation and expiration of the proper therapeutic effect, as well as instructions in the necessary precautions for preservation. Sending free samples of specialized drugs to physicians is prohibited. In order to verify the therapeutic effect of new preparations, samples can be sent to public hospitals in the appropriate specialty. Manufacturers can obtain authorization from any hospital to have their products used in the hospital for six months.

The functions of the committee include (1) obtaining information from manufacturers on the amount of drugs produced and imported and on the quality and perishability of drugs and products, (2) determining that specialized laboratories have the proper equipment, (3) prohibiting substitution of a given drug for another one in pharmacies and drug stores, and (4) supervising enforcement of the law. Offenders will be punished by the National Department of Hygiene according to national penal laws or will receive orders from the department to close their laboratories and discontinue the manufacture and sale of their products. Advertising must be submitted to the National Department of Hygiene for approval. Drugs advertised as "infallible" or sold in unauthorized places are unlawful. Laboratories for clinical analysis have to be registered in the National Department of Hygiene, must meet the requirements and have the personnel demanded by the department and be supervised by the Bacteriologic and Chemical Institutes of Argentina, which are branches of the National Department of Hygiene.

School of Nurses in Colombia

The National School for Nurses of the National University of Colombia is to be opened soon. It is to be supported by the government with the cooperation of the Pan American Sanitary Bureau, the Rockefeller Foundation and the Inter-American Cooperative Department of Public Health. The school will be under the auspices of the Ministry of Work, Hygiene and Social Aid and the National University. The first course will admit no more than 50 students having high school certificates. Scholarships are to be given to qualified students. The course of study and the school regulations will be prepared by the Ministry of Work and approved by the university. The course will consist of three years of study in physics, biologic and sociologic sciences, hygiene, sanitation, preventive and curative medicine, nursing and correlated studies. Miss Helen Howitt and Miss Johanna Schwarte were appointed by the Pan American Sanitary Bureau to teach nursing in Buenos Aires.

Brief Items

The Ateneo of Medicine was founded in La Paz, Bolivia, two years ago. Weekly medical meetings and scientific medico-legal lectures to which professors of the various Latin American countries are invited take place regularly. Forty-five such meetings were held during the past year. Recently a medical week, the Jornadas Internas de la Institución, was observed The Ateneo makes arrangements for postgraduate courses for its members in various universities in Pan American countries.

The hospital of the Academia Nacional de Medicina of Buenos Aires is to be constructed on a site of 10,000 square meters that the Bunge y Born Ltda. Company donated to the academy.

Marriages

MARTIN OSMOND GRIMES, Newport, R. I., to Miss Elin Christine Nelson of Astoria, Long Island, N. Y., in August.

WILLIAM MEAD GRIFFIN, Hackensack, N. J., to Miss Shirley Mayfourth of Barrie, Vt., in New York, September 11.

ROGER WILLIAM BREYTSPRAAK to Miss Evelyn Lucille Grimm, both of Gilbertsville, Ky., in Benton, October 26.

WILLIAM ERNEST BRACKETT to Miss Sarah Louise Faulkner, both of Hendersonville, N. C., November 3.

LESLIE S. FREEMAN, Easton, Pa., to Miss Muriel Hilda Messinger of New York in September.

GEORGE ALEXANDER CARDEN JR. to Miss Constance Seeger Sullivan, both of New York, recently.

GILES QUARLES GILMER, Lebanon, Va., to Miss Sue Wilson at Silver Springs, Md., October 18.

JAMES R. CASH, Charlottesville, Va., to Mrs. Mary Frazier Meade at Miquon, Pa., in October.

HORACE MILTON DALTON, Norton, Va., to Miss Lalla Lee Lafitte of Estill, S. C., August 10.

ANTHONY P. DONOHOE, Davenport, Iowa, to Miss Margaret McGivern at LeClaire, October 2.

MARIO D. CAPIO, Paterson, N. J., to Miss May Veenstra of Midland Park recently.

JOHN W. GALSON, Butler, Pa., to Miss Margaret Hummel at New Holland recently.

Deaths

Archibald Johnston Buist ● Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1896; since 1939 professor emeritus of gynecology at his alma mater, where he had formerly been professor of gynecology, professor of abdominal surgery and gynecology, professor of clinical and minor surgery and assistant instructor in pathology, bacteriology and histology and lecturer on minor surgery and bandaging; past president of the Charleston County Medical Society; member of the Southern Surgical Association and the Southeastern Surgical Congress; fellow of the American College of Surgeons; a founder member of the American Board of Surgery; at one time a member of the city board of health; formerly surgeon general of the South Carolina State Militia; chairman of the third district medical advisory board of South Carolina during the draft period of World War I and chairman of the local chapter of the American Red Cross; president of the board of trustees, Charleston Museum; visiting surgeon, and member of the board of commissioners, Roper Hospital; visiting surgeon to the Riverside Infirmary, Baker Memorial Sanatorium and St. Francis Xavier Infirmary; died September 12, aged 71, of coronary thrombosis.

Herbert Maskell Goddard ● Philadelphia; Medico-Chirurgical College of Philadelphia, 1905; assistant professor of otology at the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; member of the American Academy of Ophthalmology and Otolaryngology; founder of the Philadelphia Laryngological Society; fellow of the American College of Surgeons; served as assistant director of public health; county coroner; president of the board of trustees of the Eastern Penitentiary; otorhinolaryngologist, Philadelphia General Hospital, Jewish Hospital, Matilde Adler Loeb Dispensary, Home for Hebrew Orphans and the National Stomach Hospital, Philadelphia, and Eagleville (Pa.) Sanatorium for Consumptives; consultant, Nanticoke (Pa.) State Hospital, Eastern State Penitentiary Hospital and Shriners' Hospital for Crippled Children; died November 23, aged 63.

Ralph Alvin Bowdle ● East Ely, Nev.; Medical College of Ohio, Cincinnati, 1909; a founder member of the American Board of Surgery; fellow of the American College of Surgeons and state chairman, International College of Surgeons, American Association of Industrial Physicians and Surgeons and the American Association of Railway Surgeons; past president of the Nevada State Medical Association and the White Pine County Medical Society; member of the state board of medical examiners; served during World War I; chief surgeon of the Steptoe Valley Hospital, Nevada Northern Railway and Nevada Mines division of the Kennecott Copper Corporation; a charter member of the Ely Rotary Club and a director of the Ely National Bank; died suddenly October 31, aged 59, of coronary occlusion.

Frederick William Mitchell ● Houlton, Maine; Baltimore Medical College, 1898; fellow of the American College of Surgeons; past president of the Maine Eye and Ear Association; at one time chairman of the medical advisory board of the southern Aroostook district; at one time a member of the Maine House of Representatives and state senator; member of the governor's council in 1939 and 1940; member of the Republican State Committee from 1934 to 1937; a director and vice president of the Houlton Trust Company and formerly chairman of the local school committee; a charter member and second president of the Rotary Club; surgeon and for many years president of the staff, Aroostook General Hospital, where he died September 5, aged 69, of Parkinson's disease.

John Ernest Toye ● Arlington, N. J.; Dartmouth Medical School, Hanover, N. H., 1901; fellow of the American College of Surgeons; head of the orthopedic department of the board of education of Newark; a captain in the medical corps of the U. S. Army during World War I; served as chief surgeon, Hospital and Home for Crippled Children, Newark, attending orthopedist, Hospital of St. Barnabas and for Women and Children, and St. Michael's Hospital, Newark, and West Hudson Hospital, Kearny; consulting orthopedist, Children's Country Home, Westfield, and the Betty Bacharach Home for Afflicted Children, Longport; a member of the board of directors of the First National Bank of Kearny; died September 17, aged 67, of coronary thrombosis.

William Joseph Martin, Davidson, N. C.; University of Virginia Department of Medicine, Charlottesville, 1890; member of the Medical Society of North Carolina; adjunct professor of science at the Davidson College, 1890-1891, Chambers professor of chemistry from 1896 to 1912, bursar from 1896 to 1899, proctor from 1908 to 1912, president from 1912 to 1929 and later president emeritus; instructor of chemistry at the University of Virginia from 1892 to 1896 and professor of sciences at the Presbyterian College, Clinton, S. C., 1888-1889; president of the General Assembly's Training School, Richmond, Va., from 1930 to 1933; died in Richmond, Va., September 7, aged 75, of pneumonia.

Alva Lawrence Peckham ● Poughkeepsie, N. Y.; Hahnemann Medical College and Hospital of Philadelphia, 1899; specialist certified by the American Board of Pathology, Inc.; member of the American Society of Clinical Pathologists; past president of the Dutchess County Medical Society and the New York State Association of Public Health Laboratories; secretary of the Dutchess County Health Association; secretary of the board of trustees of the Vassar Institute; for many years pathologist on the staff of the Vassar Brothers Hospital, where he died September 13, aged 68, of septic thrombophlebitis and secondary anemia.

Haldor Barnes ● Toledo, Ohio; Københavns Universitet Laegevidenskabelige Fakultet, Denmark, 1924; medical officer with the first Byrd antarctic expedition from 1928 to 1930; served in the medical corps of the Danish army for three years; formerly acting assistant surgeon, U. S. Public Health Service; at one time Marinette County (Wis.) physician; a member of the Gillette Clinic; died in the Robinwood Hospital September 12, aged 49, of cerebral hemorrhage.

John Mason Blake, Barton, Vt.; University of Vermont College of Medicine, Burlington, 1898; past president of the Northeastern County Medical Society; died in the Orleans County Memorial Hospital, Newport, September 13, aged 68, of complications following an operation for strangulated umbilical hernia.

J. Gaspard Boucher, Woonsocket, R. I.; School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, 1893; formerly city physician; a consulting member of the courtesy staff, Woonsocket Hospital; died September 21, aged 76, of bronchial asthma and cerebral hemorrhage.

Robert J. Burns, Freeport, Ill.; Rush Medical College, Chicago, 1896; formerly health commissioner of Freeport; past president of the Stephenson County Medical Society; served on the staff of St. Francis Hospital; died September 15, aged 72, of myocarditis.

William P. Callen, Port Neches, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1888; died September 14, aged 84, of senility.

Edward Thomas Carberry ● Wharton, N. J.; New York Homeopathic Medical College and Flower Hospital, New York, 1923; served during World War I; police surgeon, school physician, health officer and director of civilian defense; on the staff of the Dover General Hospital; died September 20, aged 45, of pulmonary embolism.

John Lovell Cass ● Kankakee, Ill.; St. Louis University School of Medicine, 1904; for many years on the staff of the Kankakee State Hospital; died September 22, aged 63, of coronary occlusion.

Albert Emory Chase, Santa Ana, Calif.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1907; member of the California Medical Association and the Radiological Society of North America, Inc.; roentgenologist, Orange County Hospital; died September 15, aged 63, of carcinoma of the bladder.

John S. Clark, Ivanhoe, Va.; University College of Medicine, Richmond, 1900; member of the Medical Society of Virginia; died suddenly September 25, aged 65, of heart disease.

Lawrence Edward Clark ● Ennis, Texas; University of Nashville (Tenn.) Medical Department, 1900; on the staff of the Ennis Municipal Hospital; member of the school board; died September 10, aged 67, of coronary thrombosis.

Harry Edwards Clyde, Evanston, Ill.; Medico-Chirurgical College of Philadelphia, 1899; formerly on the staff of the Evanston Hospital; died September 3, aged 68, of carcinoma of the stomach.

Lewis E. Cochran, Peck, Mich.; Western Reserve University Medical Department, Cleveland, 1891; member of the Michigan State Medical Society; health officer and a member of the school board; died September 2, aged 75, of cerebral hemorrhage.

John Milton Colley, Palestine, Texas; University of Georgia Medical Department, Augusta, 1881; past president of the Anderson County Medical Society; formerly city and county health officer; died September 30, aged 88, of arteriosclerosis.

Chandos Burton Conner, Boston; College of Physicians and Surgeons, Baltimore, 1895; died September 15, aged 69, of congestive heart disease.

Nielson Pharr Coppedge, Candor, N. C.; North Carolina Medical College, Davidson, 1903; died September 26, aged 63.

Harley Franklin Davis, Miami, Fla.; St. Louis University School of Medicine, 1924; member of the Florida Medical Association; served during World War I; first lieutenant in the medical reserve corps of the U. S. Army, assigned to the 76th Coast Artillery at Fort Bragg, N. C.; honorably discharged because of physical disability on April 29, 1942; died in the Jackson Memorial Hospital October 16, aged 44, of extradural hematoma and skull fracture received in a fall.

Merrill B. Dean, Candor, N. Y.; University of Pennsylvania Department of Medicine, Philadelphia, 1894; president of the village and health officer; died in a hospital at Miami, Fla., September 5, aged 73, of arteriosclerosis.

Wright Wiley Diamond, Magee, Miss.; St. Louis College of Physicians and Surgeons, 1919; member of the Mississippi State Medical Association; owner and medical superintendent of the Magee General Hospital; formerly assistant superintendent, Mississippi State Charity Hospital, Jackson; died September 13, aged 64, of coronary thrombosis.

Richard Maxwell Fancher, Napa, Calif.; University of Nashville (Tenn.) Medical Department, 1911; served during World War I; died in September, aged 59.

Henry Elmer Fernald ● East Boothbay, Maine; Dartmouth Medical School, Hanover, N. H., 1894; health officer of the town of Boothbay; died September 15, aged 77, of hemorrhage due to ruptured aneurysm.

Jacob B. Feuerstein, Atlantic City, N. J.; Baltimore University School of Medicine, 1892; served during World War I; formerly on the staff of Mount Sinai Hospital, Philadelphia; died September 17, aged 84, of acute dilatation of the heart, general arteriosclerosis and chronic myocarditis.

John Lake Fortson, Tecumseh, Okla.; University of Texas School of Medicine, Galveston, 1909; member of the Oklahoma State Medical Association; served during World War I; city and county physician; physician in the Shawnee Indian Agency for many years; died September 9, aged 67.

John Rollin French, Los Angeles; University of Southern California College of Medicine, Los Angeles, 1906; member of the California Medical Association; formerly owner and superintendent of the Golden State Hospital; died September 28, aged 63, of coronary heart disease.

Hamilton Redd Frye, Beallsville, Pa.; Jefferson Medical College of Philadelphia, 1882; died September 6, aged 87, of chronic endocarditis.

John Wesley Gallagher ● Perry, N. Y.; University of Pennsylvania School of Medicine, Philadelphia, 1923; diplomate of the National Board of Medical Examiners; decorated with the Purple Heart for gallantry in action for his service with the American Expeditionary Forces in France during World War I; health officer for the towns of Perry and Covington; county coroner; member of the library board and Rotary Club; died in the Wyoming County Community Hospital, Warsaw, September 18, aged 46, of leukemia.

Franklin D. Garrett, Denton, Texas; Baltimore Medical College, 1898; member of the State Medical Association of Texas; died in September, aged 67.

John Andrew Gartlan, Paden City, W. Va.; Medical Department of Western University of Pennsylvania, Pittsburgh, 1906; died September 6, aged 64, of arteriosclerosis and gangrene.

William Robert Grady, Meridian, Miss.; Atlanta School of Medicine, 1911; member of the Mississippi State Medical Association; veteran of the Spanish-American War; died in Rush's Infirmary September 4, aged 64, of cerebral hemorrhage.

Edwin Wakefield Grubb ● Akron, Ohio; Cleveland Homeopathic Medical College, 1903; on the staffs of Peoples and St. Thomas hospitals; died September 23, aged 73, of angina pectoris.

Albert John Guerinot ● Pittsburgh; University of Louisville (Ky.) School of Medicine, 1912; member of the Medical Society of the State of Pennsylvania; senior attending surgeon and attending bronchoscopist on the staff of St. John's General Hospital; a member of Phi Chi Medical Fraternity; author of articles on the eye and ear; died in the Suburban General Hospital, Bellevue, September 18, aged 56.

William Alonzo Harvey, San Carlos, Calif.; California Medical College, San Francisco, 1888; St. Louis College of Physicians and Surgeons, 1895; at one time a member of the board of health of San Francisco; died in a San Mateo hospital September 1, aged 75, of carcinoma of the throat.

Nicholas Edward Hausmann ● Kewaskum, Wis.; Rush Medical College, Chicago, 1899; past president of the Washington-Ozaukee Counties Medical Society; health officer; died September 13, aged 68, of arteriosclerosis.

Kenneth Philip Henderson ● Pleasantville, N. J.; Temple University School of Medicine, Philadelphia, 1933; urologist, Shore Memorial Hospital, Somers Point, where he died September 10, aged 34, of chronic glomerular nephritis with hypertension and chronic appendicitis.

Oliver Ernest Hensley ● Herculaneum, Mo.; St. Louis University School of Medicine, 1903; past president of the Jefferson County Medical Society; past president of the board of education of Herculaneum; died September 15, aged 68, of heart disease.

Edward John Hill, Eureka, Calif.; University of California Medical Department, San Francisco, 1894; died in the Humboldt County Hospital September 15, aged 77, of cerebral hemorrhage.

Max S. Hirschfield, Duluth, Minn.; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1902; member of the Minnesota State Medical Association; on the staffs of St. Mary's and St. Luke's hospitals; died in Beverly Hills, Calif., September 4, aged 76, of acute heart disease.

Samuel A. Myers Hubbard ● Ridge Farm, Ill.; Loyola University School of Medicine, Chicago, 1916; past president of the Vermilion County Medical Society; served during World War I; member of the Selective Service Board number 2 of Vermilion County; company surgeon for the Nickel Plate Railroad; on the courtesy staffs of St. Elizabeth and Lake View hospitals, Danville; died September 9, aged 54, of cerebral thrombosis.

Erastus Mead Hudson, Washington, D. C.; Columbia University College of Physicians and Surgeons, New York, 1917; senior medical officer, Federal Trade Commission; an honorary surgeon in the New York City police department; served in the medical corps of the U. S. Navy; died in the Veterans Administration Facility September 12, aged 55, of chronic nephritis.

Charles Warren Hunter, Port Byron, Ill.; Rush Medical College, Chicago, 1894; served during World War I; died September 4, aged 73, of cerebral hemorrhage.

Charles Bruce Irwin ● Chicago; University of Maryland School of Medicine, Baltimore, 1904; clinical assistant in medicine at the Northwestern University Medical School; vice president and medical director of the North American Life Insurance Company; died September 21, aged 62, of heart disease.

Charles Edgar Kahle, Oklahoma City; Medical College of Indiana, Indianapolis, 1897; a member of the chamber of commerce and Rotary Club; died September 15, aged 76.

William Frederick Keck, Brownsville, Pa.; Jefferson Medical College of Philadelphia, 1920; member of the Medical Society of the State of Pennsylvania; on the staff of the Brownsville General Hospital; died in the Mercy Hospital, Pittsburgh, September 8, aged 44, of carcinoma of the stomach.

Sylvester Carl Kehl ● Chicago; University of Illinois College of Medicine, Chicago, 1919; for many years pediatrician for the Infant Welfare Board of Health; served during World War I; major, medical reserve corps, U. S. Army, not on active duty; on the staff of the Holy Cross Hospital; died in the Evangelical Hospital September 23, aged 48, of cerebral hemorrhage.

Abraham Ober Kleiman ● Hartford, Conn.; Tufts College Medical School, Boston, 1933; died in the Peter Bent Brigham Hospital, Boston, September 12, aged 35, of leukemia.

Royal Estabrook LaGrange, Fort Ann, N. Y.; Albany Medical College, 1912; health officer; formerly physician for the Great Meadow Prison, Comstock; served on the staff of the Albany Hospital; died in the Glens Falls Hospital September 4, aged 59, of coronary thrombosis.

Corvus Council Lang, Des Moines, Iowa; St. Louis College of Physicians and Surgeons, 1893; served during World War I; died in the Veterans Administration Facility, Hines, Ill., September 14, aged 72, of chronic cholecystitis, choledocholithiasis and coronary heart disease.

Edwin S. Leach, Junction City, Kan.; Ensworth Medical College, St. Joseph, Mo., 1894; died in the Junction City Municipal Hospital September 15, aged 76, of nephritis.

Joseph Milton Levine ● Brooklyn; Cornell University Medical College, New York, 1922; on the staff of the Beth Moses Hospital; died in the Triboro Hospital, Jamaica, N. Y., September 21, aged 45, of tuberculosis.

George Henry Lewis, Lakewood, Ohio; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1905; member of the Ohio State Medical Association; on the visiting staffs of the Fairview Park and St. John's hospitals, Cleveland, and the Lakewood Hospital; died September 28, aged 67, of chronic myocarditis and cardiovascular disease.

Harry Chamberlain Low, Hanover, Mass.; Harvard Medical School, Boston, 1899; formerly on the staffs of the Massachusetts General, Boston City and the Children's hospitals, all of Boston; for two years a member of the department of tuberculosis, Massachusetts State Department of Public Health; died September 13, aged 72, of cerebral embolism.

Wilfred Francis Lowe ● Jackson, Calif.; Rush Medical College, Chicago, 1930; served as city physician and as a member of the board of trustees of the grammar school district; on the staff of the Mercy Hospital, Sacramento, where he died September 11, aged 40, of an accidental gunshot wound.

Thomas Donald MacRossie, Copiague, N. Y.; University of the City of New York Medical Department, 1897; served during World War I; died in the Veterans Administration Facility, New York, September 1, aged 71, of arteriosclerosis and heart disease.

James Albert McClure ● Columbus, Ohio; University of Wooster Medical Department, Cleveland, 1881; on the staffs of the Grant and White Cross hospitals; died September 10, aged 88, of acute endocarditis.

John Henry McCormick, Mobile, Ala.; National University Medical Department, Washington, D. C., 1891; member of the Medical Society of the District of Columbia; president of the White County Tuberculosis Sanitarium; died September 15, aged 73, of heart disease.

Henry Madison McCracken, Argos, Ind.; University of Louisville (Ky.) Medical Department, 1907; member of the Indiana State Medical Association; died September 11, aged 70, of cerebral hemorrhage.

Oscar Lee McFadyen Sr., Fayetteville, N. C.; North Carolina Medical College, Charlotte, 1912; member of the Medical Society of the State of North Carolina; secretary and past president of the Cumberland County Medical Society; secretary-treasurer of the Fifth District Medical Society; a member of the Rotary Club; died September 26, aged 52, of coronary sclerosis.

John Newton McGrath, ● St. Louis; St. Louis University School of Medicine, 1920; on the staff of St. John's Hospital, where he died September 21, aged 48, of heart disease.

Charles Havelock Beverly Meade, Stamford, Conn.; University of Louisville (Ky.) Medical Department, 1902; member of the Connecticut State Medical Society; a member of the associate staff of the Stamford Hospital; died September 6, aged 65, of arterial hypertension and cardiac decompensation.

Joseph Edward Miller ● Los Angeles; Wisconsin College of Physicians and Surgeons, Milwaukee, 1912; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology and the Pacific Coast Oto-Ophthalmological Society; fellow of the American College of Surgeons; formerly instructor in otolaryngology at the College of Medical Evangelists; on the staff of the Santa Monica Hospital; died, September 13, aged 54, of coronary disease.

LIEUT. COMDR. MALCOLM L. PRATT (MC), U.S.N.R., 1891-1942

William R. Miller, Brownsville, Tenn. (licensed in Tennessee in 1912); died in the Haywood County Memorial Hospital September 6, aged 53.

Charles Weston Morey, Detroit; Trinity Medical College, Toronto, Ont., Canada, 1890; died September 30, aged 87, of pneumonia.

John A. Moore ● El Dorado, Ark.; Memphis (Tenn.) Hospital Medical College, 1898; first vice president of the Mid-South Medical Association; secretary of the staff of the Warner Brown Hospital; died in St. Joseph's Infirmary, Hot Springs National Park, September 9, aged 70, of coronary occlusion.

William Nagin, Brooklyn; Long Island College Hospital, Brooklyn, 1913; on the staff of the Unity Hospital; died in the Long Island College Hospital September 19, aged 59.

Samuel D. Nevling, St. Louis (licensed in Missouri in 1896); died September 23, aged 77, of myocardial failure.

King Allen Norris, Columbus, Ohio; Ohio Medical University, Columbus, 1898; died September 4, aged 72.

Edward Sylvester Norton, Brooklyn; Long Island College Hospital, Brooklyn, 1908; formerly director of the chamber of commerce of Flatbush; died September 21, aged 67.

Samuel Joseph Ottinger, Philadelphia; Jefferson Medical College of Philadelphia, 1892; member of the Medical Society of the State of Pennsylvania; died September 15, aged 80.

George Philo Pitkin ● Bergenfield, N. J.; Albany (N. Y.) Medical College, 1908; fellow of the American College of Surgeons; on the staff of the Holy Name Hospital, Teaneck, where he died September 3, aged 58, of acute appendicitis with local peritonitis and pneumococcic bronchopneumonia.

William Pinkney Reeves ● Washington, D. C.; Georgetown University School of Medicine, Washington, 1899; formerly clinical professor of surgery at the George Washington University School of Medicine and at his alma mater; died September 11, aged 72, of angina pectoris.

James Lee Rogers, Spokane, Wash.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1905; member of the Washington State Medical Association; fellow of the American College of Surgeons; died suddenly September 3, aged 65, of coronary occlusion.

John Randolph Rogers ● Grand Rapids, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1895; past president of the Kent County Medical Society; for many years president of the Grand Rapids Association for the Blind and for Sight Conservation; fellow of the American College of Surgeons; visiting surgeon on the staff of the Butterworth Hospital and the D. A. Blodgett Home for Children; died September 10, aged 74, of heart disease.

William Roush, Lima, Ohio; Cincinnati College of Medicine and Surgery, 1891; fellow of the American College of Surgeons; radiologist at St. Rita's Hospital and the Lima Memorial Hospital, where he died, September 11, aged 78, of aplastic anemia.

KILLED IN ACTION

Malcolm Lewis Pratt ● Bellefontaine, Ohio; Jefferson Medical College of Philadelphia, 1914; a founder member of the American Board of Surgery; served with the Fifth Marine Regiment during World War I and was awarded the Navy Cross, citations from the United States government and a French decoration; commissioned a lieutenant commander in the medical corps of the U. S. Naval Reserve on March 29, 1941; regimental surgeon of the Fifth Marine Regiment at New River, N. C.; reported missing in action, Aug. 13, 1942, while attached to the First Marine Division, Fleet Marine Force, when certain personnel failed to return from a reconnaissance patrol near Matanikau Village, Guadalcanal, Solomon Islands; aged 51; officially declared dead by the Navy Department Aug. 14, 1943.

Bureau of Investigation

SOME MISCELLANEOUS MEDICAL FRAUDS

A Variety of Schemes Debarred from the Mails

Fraud orders issued by the Post Office Department have frequently been the subject of extensive articles by the Bureau of Investigation in these pages of THE JOURNAL. Following are abstracts of some fraud orders not dealt with previously:

"Dr." D. K. Tuey, D. K. Tuey Herb Company and Tuey Chinese Herb Company.—The D. K. Tuey who has business from Los Angeles under these names has long advertised himself as a "Chinese Herbalist," offering a "Chinese Remedy" for ulcers, eczema and fistula, and various herbal "cures" for a variety of disorders including tonsillitis, catarrh, asthma, colds, appendicitis, epilepsy, kidney and bladder complaints, neuritis, rheumatism and some twenty other conditions. As long ago as December 1924 the California state licensing board had Tuey arrested on the charge of violating the state medical practice act, and on his plea of guilty to the charge he was fined $1,000 in a local court. Nevertheless his herbal business seems to have thrived until the Post Office Department learned that Tuey solicited through the mails remittances for his "Chinese herbs," representing that these would cure tuberculosis, rickets, cancer, gallstones, syphilis, gonorrhea and (with the assistance of his salve) pellagra. Accordingly, that Department notified Tuey to show cause why a fraud order should not be issued against the business, but neither he nor any one representing him appeared at the hearing. Government witnesses testified that Tuey's real name was Loy S. Tuey and that he had come to this country from China in 1904, conducted his "herb" activities since 1912, had storage room for more than 1,000 different kinds of herbs and admitted that his office sales amounted to $300 a month and those by mail to about $400. It was further shown that Tuey claimed to have studied herbs both in China and in America and thus to be qualified as a "herbal diagnostician" and proper treatment for any disease he "diagnosed" after reading the symptoms described by his customers in their letters. His literature included a book, "Health Through Nature—How to Obtain and How to Keep It." The government's expert medical witness testified as to various diseases for which Tuey "prescribed" his herbs, but which they could in no sense cure. In consequence of all the evidence presented, a fraud order closing the mails to this scheme was issued on May 22, 1943, against the trade styles D. K. Tuey, Dr. D. K. Tuey, D. K. Tuey Herb Company and Tuey Chinese Herb Company.

F. O. Redfield.—This person and his "psoriasis cure" business have been known to the American Medical Association since 1931, when he was promoting one such treatment from Woodside, Long Island, N. Y. According to a government investigator, Redfield claimed that he discontinued his mail-order business from 1931 until 1942, when he resumed it at Wilmington, Del. Redfield's circulars claimed that by studying diet he cured himself and a friend of psoriasis. His "method" could be learned from his book, "How I Rid Myself of Psoriasis," price $17.50, which to hesitant prospects was sometimes gradually reduced to $3.00. In addition to diet rules, the book advised taking an enema of warm water and castile soap every night before retiring. After due investigation, the Post Office Department summoned Redfield to a hearing in Washington on charges of fraud. A specialist in skin diseases testified for the government on the causes and scientific treatment of psoriasis and showed that it would be impossible for a layman accurately to diagnose a case of psoriasis, since that condition might easily be mistaken for the various types of eczema and other skin diseases, and that only the medical profession, by laboratory microscopic analysis, could definitely identify psoriasis. Further, he stated that the medical profession had experimented extensively with the use of diets in treating psoriasis and had found them worthless. He testified specifically that the diet recommended in Redfield's booklet would be useless in treating psoriasis, and that neither the laxatives described in the book nor the elimination of coffee from the diet would benefit the patient. Redfield, in his own defense, represented that his book was intended to set forth the method or means by which he "rid himself of psoriasis," and that in it he nowhere claimed that it would cure any other person afflicted with psoriasis. Since he was unable to disprove the charge that he was conducting a fraudulent scheme, the mails were closed to him under a fraud order issued July 15, 1943, against the trade styles "F. O. Redfield" and "F. O. R."

G. B. Taylor, M.D.—At Cameron, Texas, Dr. Green Benjamin Taylor practices as a specialist in eye, ear, nose and throat disorders. Dr. Taylor was graduated from Memphis Hospital Medical College, Memphis, Tenn., in 1900 and licensed to practice in Texas by the Act of 1907. He is reported to be a member of his local medical society, but not a Fellow of the American Medical Association. In addition to his practice, Dr. Taylor for a time was engaged in selling through the mails a preparation called "Orine" for deafness, head noises and other hearing disorders, besides "Nerve and Kidney Tablets" for various diseases and ailments. After the Post Office Department had investigated the business, it notified Dr. Taylor to appear for hearing before that Department in Washington on May 20, 1941, and show cause why a fraud order should not be issued against his enterprise. Thereafter, it is reported, Dr. Taylor offered to discontinue it entirely. In the latter part of 1942, however, the Post Office Department undertook a second investigation of the scheme after obtaining evidence that Dr. Taylor was again offering treatments for deafness and head noises through the mails. It was learned that in answering one inquirer, Dr. Taylor pointed out that he had been secretary of his county medical society for 25 years, and at other times its president, as well as president of the district medical society, vice-president of the state medical association, and a Fellow of the American Medical Association "for many years," besides "operating my private hospital" and "attending the various ear hospitals in Chicago for many years." His letter went on to discuss the anatomy of the ear and to solicit an order for his "Two-Way Prescriptions"—$3.00 down and an additional later payment of $2.00 if the customer was satisfied. One person who sent the money received in return a so-called "Ear-Prescription" and an "Ear-Nose Prescription." The first of these called for 8 grains each of biborate and bicarbonate of sodium and ½ ounce each of distilled water and glycerin, to be placed in each ear for three successive nights and washed out on the fourth day, once a week for three weeks, to "soften and dissolve ear wax in the outer ear canal that does cause deafness and noises." The "Ear-Nose Prescription" called for 2 grains each of menthol and gum camphor and 2 ounces of chloretone inhalant, sprayed into the nose night and morning to relieve "catarrhal inflammation." There was added the comment: "You should feel your ears pop when blow as directed." Dr. Taylor also played up a "Three Way Prescription," which apparently differed from the "Two Way" variety in that a third mixture was recommended under the name "Nerve Prescription." This called for "Prostigmin Bromide (Tablets) 15 Mg. ea. No. 20" and directed the user to take one tablet at night to "aide and relive [sic] the auditory nerve that can be causing defaness [sic] and head noises." At the hearing of the case an expert medical witness for the government testified that, among other things, deafness and head noises are due to a number of causes, which he detailed, and went on to show that Dr. Taylor's "treatment" would not be effective in most ear and nose disorders and, in some cases, might actually be harmful. He further testified that prostigmin bromide, the only drug contained in the Nerve Prescription, would merely help to firm up the muscles and would not and could not overcome deafness, head noises or their numerous causes. Although the brief filed by Dr. Taylor as an answer to the charges denied that the Ear Prescription as now sold was identical with "Orine" which he formerly purveyed, the expert testimony introduced by the government at the hearing showed that both were composed mainly of glycerin and that their effect was merely to soften and make easier the removal of ear wax. Again, though Dr. Taylor's brief contended that prostigmin bromide, contained in his so-called Nerve Prescription, had been used successfully in the treatment of deafness, both by himself and by many other ear specialists "attending the larger hospitals in the east," he submitted no evidence whatever, other than his own statement, in support of these contentions, and even admitted that he himself had been slightly deaf, with head noises and atrophic rhinitis, for several years. The outcome of the hearing was a fraud order issued by the Post Office Department April 9, 1943, against Dr. G. B. Taylor.

Menade Products and T. E. Bonestell.—Bonestell was manager of the concern known as Menade Products, Pasadena, Calif., which sold tablets under the name "Menade" by mail. It represented that the product, when used as directed, would restore sexual "vigor and pep" and "manly virility" to "every man" lacking these attributes, renew "normal functioning of the male glands" and give "boundless health" to persons suffering from physical disabilities. Following up some complaints, the Post Office Department investigated the scheme and eventually charged Bonestell with fraud. He neither put in an appearance at the hearing nor was represented by counsel. A chemist testified for the government that each Menade tablet contained talc and chalk (mostly in the coating), 0.15 grain of iron and a negligible amount of organic iodine, plus some glandular matter, yeast, small amounts of phosphoric pentoxide (P_2O_5), presumed to be from the glandular matter, and traces of sulfate, sodium chloride and potassium. The witness added that the claimed vitamins might be present. A physician testified for the government that a lack or lessening of sexual power or vigor is due primarily to old age and general decadence of the tissues throughout the body, including those of the glands, and that chronic ailments or psychic disturbances may be contributing factors. His testimony further showed that Menade would not and could not restore sexual "vigor and pep" and "manly virility" to "every man" lacking therein, or bring back "normal functioning of the male glands," as claimed. Accordingly, a fraud order was issue on May 14, 1943, debarring Menade Products and T. E. Bonestell, Manager, from further use of the mails.

Peptonik Mineral Company and J. T. Atkinson.—J. T. Atkinson was reported to be the proprietor of the business at Huntsville, Ala. The Post Office Department ordered the concern to show cause why a fraud order should not be issued. Neither the respondents nor their legal counsel put in an appearance at the hearing. They were given until June 1, 1943 to submit whatever brief or argument they desired. They simply returned the transcript without any accompanying reply. The Post Office memorandum on the case charged that the concern sold "Peptonik Mineral" through the mails under claims that, when used as directed, it would overcome arthritis, kidney and bladder trouble, gallstones, high blood pressure, weak heart, stomach trouble, pellagra, eczema, prostate disorder and "any sore or skin disease, regardless how old it might be" or the cause thereof; that the product, when used as directed, would be more effective in the treatment of the disease and conditions for which it is sold than any other known treatment; that it would obviate the necessity for needed surgical operations and that, when taken according to directions, it would produce results identical with or similar to those described in the testimonial letters that were embodied in the advertising. At the hearing a government chemist summarized his analysis of the product by testifying that the mixture was "just a preparation of iron with traces of these other minerals." The government's expert medical witness testified that the iron or ferric sulfate was the only drug in the product which would have any substantial therapeutic effect, and that, even so, ferric sulfate is not recognized as a proper drug for internal use because of its irritant effect and because there are other forms of iron much more useful, and not so irritant to the stomach and teeth. This witness further testified that Peptonik Mineral would not be an effective treatment for rheumatism, arthritis, or the other disorders for which it was recommended. Accordingly, the Peptonik concern and J. T. Atkinson were found to be conducting a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises, and a fraud order debarring them from the mails was issued on June 23, 1943.

Correspondence

THE PRESENT DAY STATUS OF CAUDAL ANESTHESIA IN OBSTETRICS

To the Editor:—In an attempt to forestall any possible decline in the popularity which caudal anesthesia, both the single injection and the continuous injection variety, have attained, this statement weighing the advantages and disadvantages of each is presented.

Differences of opinion as to the merits of single injection caudal and continuous caudal prevail among the advocates of caudal anesthesia. Each has its place, dependent on the facilities and training of the personnel. The following points are listed to enable an impartial comparison of the two:

1. The indications, contraindications and preanesthetic preparation of the patient are the same for the two types of caudal anesthesia. The obstetrician or the trained assistant administering caudal anesthesia must be constantly on guard against complications.

2. The single injection caudal anesthetic may be given by the obstetrician or the trained assistant just prior to the termination of the second stage of labor, while the continuous caudal analgesia and anesthesia may be given by the obstetrician or the trained assistant during the first stage of labor and controlled by a trained assistant throughout labor and delivery.

3. The likelihood of an intrathecal or an intravenous injection of the anesthetic solution is less with single injection caudal anesthesia because the needle is introduced into the sacral canal just far enough to insure proper distribution of the anesthetic solution and is well within the limits of safety. In continuous caudal anesthesia inadvertent intrathecal or intravenous injection of the anesthetic solution is possible since the needle is introduced up to its hilt (2½ to 3 inches) and is left in place; accidental movement of the needle collar might result in puncture of the dural sac or a vein.

4. There is less quantity of anesthetic solution needed with single injection caudal anesthesia since the second stage of labor is well advanced at the time of the administration of the anesthetic. Under continuous caudal anesthesia a greater quantity of anesthetic solution is needed since analgesia and anesthesia are developed and maintained from early in the first stage of labor.

5. In single injection caudal anesthesia a stiff needle is used; needle breakage is practically nil. In continuous caudal anesthesia malleable needles are used of necessity and if the same needle is used too often it may break; however, needle breakage is practically nil.

6. The introduction of the stiff needle into the sacral canal as used for single injection caudal anesthesia is easier than the insertion of the malleable needle into the sacral canal as used for continuous caudal anesthesia.

7. The chance for infection at the site of the needle insertion is slight with single injection caudal anesthesia, there being a minimum of trauma present since but a single injection is made, the needle withdrawn and the area sealed. The chance for infection at the site of the needle insertion is increased with continuous caudal anesthesia since the needle must be left in place for several hours, during which time the site of injection may be contaminated as the result of its location, the needle may become maladjusted (motion in and out resulting in contamination) as the result of inadvertent movements of the patient, trauma of tissues may develop from needle pressure when the patient is in the supine position for any great length of time and there may be unintentional contamination of the tubing, syringe and anesthetic solution during a prolonged period of maintaining analgesia and anesthesia.

8. No special equipment is needed for single injection caudal anesthesia, while special instrumentarium as devised by Drs. Hingson and Edwards and others who have modified the technic is needed for continuous caudal analgesia and anesthesia.

9. In both methods of caudal anesthesia the percentage of failure is directly proportional to the skill and judgment of the operator.

10. Under single injection caudal anesthesia the patient may be given adequate sedation (barbiturates, morphine or scopolamine) during the first and second stages of labor and the anesthetic administered for the termination of the second stage of labor. On the other hand, with continuous caudal anesthesia, as analgesia and anesthesia are maintained throughout the major portion of the entire labor, sedation is unnecessary but may be given in small quantities if desired.

11. In single injection caudal anesthesia untoward reactions are apparently nil if the patient is under mild sedation (barbiturate). Untoward reactions may be expected with continuous caudal anesthesia unless the patient is given a small quantity of sedation (barbiturate) prior to the administration of the anesthetic. However, in any event, untoward reactions are infrequent.

12. Under single injection caudal anesthesia, malpresentations do not develop as a result of the anesthesia. Malpresentations may develop under continuous caudal anesthesia as a result of prolonged pelvic floor relaxation. However, the correction of malpositions is greatly facilitated by the profound pelvic and perineal floor relaxation characteristic of either type of caudal anesthesia.

13. Precipitate deliveries do not occur under either type of caudal anesthesia.

14. Spontaneous deliveries in primiparas are infrequent under either type of caudal anesthesia. However, spontaneous deliveries may occur in multiparas not infrequently under either type of caudal anesthesia if voluntary effort is encouraged at the time of uterine contraction.

15. The blood loss in the third stage of labor is definitely lessened under either type of caudal anesthesia.

16. Rest, diet and hydration of the patient must be watched throughout the course of labor if a patient is to receive single injection caudal anesthesia. However, rest, diet and hydration offer little or no problem when a patient receives continuous caudal analgesia and anesthesia since the parturient is comfortable and willingly partakes of food and drink during the course of her labor.

17. There is less apt to be a fall in blood pressure with small single injection caudal anesthesia, although a fall in blood pressure may be evidenced with the large single injection of anesthetic solution. Under continuous caudal analgesia and anesthesia there is a slight fall in the blood pressure.

18. Since single injection caudal anesthesia is not given for the first stage of labor but only when the termination of the second stage of labor is imminent, there is no danger of interfering too early with the second stage of labor. As continuous caudal analgesia and anesthesia shortens the first stage of labor but prolongs the second stage, interference with the second stage of labor too early must be avoided.

19. The variety of operative procedures needed in the complicated delivery may be performed with facility under either type of caudal anesthesia. However, continuous caudal analgesia has a distinct advantage in the unexpectedly prolonged operative case. The incidence of outlet forceps definitely is increased under either single injection or continuous caudal anesthesia.

20. No deleterious effects have been noted on the fetal heart tones or the response of the fetus at the time of delivery under

Dr. Thurston Scott Welton, director of the Obstetrical and Gynecological Service, Greenpoint Hospital, Brooklyn, permitted this communication to be submitted from his service. The author has since been commissioned Assistant Surgeon (R) in the U. S. Public Health Service. This article has been approved for publication by Dr. Thomas Parran, Surgeon General, U. S. P. H. S.

single injection caudal anesthesia. Fetal distress has not been evidenced under continuous caudal analgesia and anesthesia although, should the drop in maternal blood pressure be more than the usual drop expected (20 mm. of mercury), fetal distress will be reflected and if the fall in blood pressure is inadvertently prolonged it will be deleterious to the fetus.

21. Postpartum complications such as urinary difficulty or subinvolution of the uterus are rarely encountered; in fact, the postpartum course actually seems expedited with the use of either variety of caudal anesthesia.

Caudal anesthesia, like any innovation, can be used feasibly only by those adequately trained; it is not possible for continuous caudal analgesia and anesthesia to be used without the aid of a trained assistant. In many instances, since the element of time plays an important role, the accoucheur may choose to use single injection caudal anesthesia for termination of the second and third stages of labor. Emphasis should be placed on the fact that the administration of caudal anesthesia is technically difficult.

Some physicians have attempted caudal analgesia and anesthesia without having sufficient knowledge of anatomy or the dangers which accompany such a major procedure, the administration of which is technically more difficult than would appear on the surface. This, if it continues, will result in constantly increasing failures, accidents of technic, morbidity and even mortality which in all likelihood will discourage its use.

There are fads in medicine just as there are in fashion, but a fad becomes an established method of procedure when it is built on a firm foundation of scientific investigation. Caudal anesthesia is of unquestionable value and, if given a sound scientific trial, will assume its proper position among accepted procedures.

ROBERT M. MITCHELL, M.D., Brooklyn.
Resident Physician in Obstetrics and
Gynecology, Greenpoint Hospital.

PRETIBIAL FEVER

To the Editor:—In THE JOURNAL, June 5, appeared an article entitled "Pretibial Fever, An Obscure Disease," by Lieut. Col. Worth B. Daniels and Capt. H. Arthur Grennan. In this article a case is made for a new syndrome characterized by fever and headache of the orbital type initiated by chills or chilly sensations and further characterized by the appearance shortly after the onset by splotchy erythematous coalescing lesions involving the anterior surface of both legs predominantly. In my experience with several hundreds of cases of dengue in an area where dengue is hyperendemic, the clinical manifestations of the disease were no different from those described in the article mentioned with the exception of the predominance of pretibial lesions. Such pretibial lesions, however, were not uncommon in this series, although they were generally associated with similar lesions on the trunk. In an article written by Rice (*Am. J. Trop. Dis.* 3:73 [March] 1923) the cutaneous manifestations of dengue fever in an epidemic in Galveston are described which were "characteristically multiforms or polymorphous, . . . bilateral and symmetrical with some urticarial element present [and] suggest a great similarity to the erythema multiforme group. The eruption seemed to show a predilection for the face, forehead, neck, upper chest, forearms, legs, palms and soles." For all the limitations of black and white photography, the lesions in the illustrations appear identical with those which I have seen here.

The absence of the saddle backed temperature curve in certain epidemics has been noted. Siler, Hall and Hitchens (*Philippine J. Sc.* 29:1 [Jan.-Feb.] 1926) said "Casual observation of a number of clinical cases in the wards of the Sternberg General Hospital had convinced us that the disease as manifested in Manila shows the diphasic temperature of the classic description only rarely." In the encyclopedic monograph on dengue by George F. Lumley and Frank H. Taylor published by the Department of Health of the Commonwealth of Australia as Service Publication (School of Public Health and Tropical Medicine) No. III the following statement appears on page 4: "There is no characteristic form of fever in dengue. Truly the diphasic forms . . . are often regarded as characteristic and classic, though clinicians have often expressed dissatisfaction of such a viewpoint. If there be a clear recognition that the fever may assume one of many forms, then the clinical appreciation of dengue will rest on a firmer base."

Comparatively few of our patients showed prolonged "postfebrile depletion or depression" and on the average were returned to duty in approximately eight to ten days after the onset.

Cough was reported in dengue by W. E. George in 1925 in a report on an epidemic of dengue in Townsville, North Queensland (Australia), unpublished.

Sore throat has been described by Goldschmidt and Crosse in the *Medical Journal of Australia.*

A slight dry cough and mild sore throat were noted with a fair degree of frequency in our cases of dengue.

Case 2 as described by the authors is typical of dengue as it is seen in this area.

Lumley and Taylor state "It is a singular circumstance that dengue fever is not medically well known. This is not the fault of the individual practitioner but is principally due to the fact that relatively few have to deal with the disease and that literature on dengue fever is largely buried in journals inaccessible outside large libraries. Other factors aggravate this position; for example, the conflict of undoubted good clinical descriptions. This raises perhaps a major consideration. Most conflicts of opinion on description are probably more apparent than real. There has been tendency to regard dengue fever as a single clinical entity, whereas the truth may well be that the term dengue fever covers a group of diseases. . . . In fact the term 'the dengue fevers' is emphasized by some authors. There may be different strains or types of the causative agent."

The disease described as pretibial fever so closely resembles dengue that, until further evidence is presented, the postulation of a new clinical entity will not serve to clarify our understanding of a disease already known to exist in the South Atlantic seaboard and which may have increasing importance in the United States.

NATHANIEL A. COHEN, Captain, M. C., A. U. S.

CITRATE WITH PROCAINE IN FRACTURE TREATMENT

To the Editor:—The role of procaine hydrochloride as a local anesthetic in fracture reduction is so well known as to require no additional comment. For many years I have used equal parts of 2.5 per cent sodium citrate and procaine as a local anesthetic. The theoretical advantages of this procedure consist in delaying the formation of any blood clot and thus aiding later reduction procedures. A certain percentage of all fractures are necessarily later operated on. When this has been done an opportunity has been afforded for visualizing the effects of the citrate.

The condition of the fracture site even in such major joints as the knee has been found to be much better than when the citrate was not added. The procedure is extremely simple, merely using 50 per cent of citrate and procaine of double the strength usually preferred. The anesthetic thus has the same effect. This procedure has been used for a sufficient number of years with satisfactory results to warrant bringing it to the attention of surgeons doing this type of work.

CHARLES MURRAY GRATZ, M.D., New York.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, Nov. 27, page 859.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* Jan. 17-19. *Part III.* Various centers, Dec. and Jan. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral. Part II.* Chicago, June 12-16. Final date for filing application is March 12. Sec., Dr. Paul M. Wood, 745 Fifth Ave., New York.

AMERICAN BOARD OF DERMATOLOGY & SYPHILOLOGY: *Written.* Various centers, May 8. *Oral.* Chicago, June 9-10. Final date for filing application is April 1. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF INTERNAL MEDICINE. *Written.* Various centers, Feb. 21. Final date for filing application is Dec. 15. Ass't. Sec., Dr. William A. Werrell, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Part II.* May or June. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh 6, Pa.

AMERICAN BOARD OF OPHTHALMOLOGY: New York, June. Final date for filing application is Dec. 15. Chicago, October. Sec., Dr. John Green, 6830 Waterman Ave., St. Louis.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Written and Oral. Part II.* Chicago, Jan. 21-22. Sec., Dr. Guy A. Caldwell, 3503 Prytania St., New Orleans, La.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* Los Angeles, Feb. 2-5. Sec., Dr. Dean M. Lierle, University Hospitals, Iowa City, Ia.

AMERICAN BOARD OF PEDIATRICS: *Written.* Locally, Feb. 4. *Oral.* Philadelphia, March 25-26, and San Francisco, May 6-7. Sec., Dr. C. A. Aldrich, 707 Fullerton Ave., Chicago.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: *Oral.* Locally, Dec. 20-21. Sec., Dr. Walter Freeman, 1028 Connecticut Ave. N.W., Washington, D. C.

AMERICAN BOARD OF RADIOLOGY: February. Final date for filing application is Dec. 15. Sec., Dr. B. R. Kirklin, 102-110 Second Ave. S.W., Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Written. Part I.* March. Final date for filing application is Jan. 1. Sec., Dr. J. Stewart Rodman, 225 S. 15th St., Philadelphia.

AMERICAN BOARD OF UROLOGY: *Oral.* Chicago, Feb. 15-17. *Written.* Various Centers, Dec. 4. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Compensation of Physician: Liability of Employee for Fees of Physician Treating Industrial Injury.—Scott, an employer subject to the workmen's compensation act of North Dakota, insured in the monopolistic state workmen's compensation fund of that state, and himself personally entitled to benefits conferred by the act, was injured in the course of his employment. The physician plaintiff treated him for his industrial injuries. Subsequently the physician sued both Scott and the state workmen's compensation bureau, an agency of the state administering the fund, for the reasonable value of the services he had rendered, alleging, in the words of the court whose opinion is here abstracted:

> that both Scott and the bureau employed the plaintiff to render medical services to Scott; that the services were worth a thousand dollars, and no part of this has been paid except the sum of $259 paid by the bureau.

Each defendant demurred and from the overruling by the trial court of both demurrers the defendants appealed to the Supreme Court of North Dakota.

Apparently Scott's demurrer was based on the theory that, because of his contract with the workmen's compensation bureau, the bureau alone was liable for the medical services rendered to him. This position cannot be sustained, said the Supreme Court. Even though Scott was entitled to share in the compensation fund, and therefore it was the duty of the bureau to furnish him medical service, this does not relieve him from his own personal liability for the medical services rendered him. The complaint in this case alleges that Scott made a contract with the physician for medical services. It shows the reasonable amount of the services and the amount paid. For the purposes of Scott's demurrer, those allegations are admitted to be true. Clearly, then, the complaint states a cause of action against Scott.

A physician, continued the court, under the applicable law in North Dakota, is not compelled to perform medical services for a workman in an employment subject to the workmen's compensation act. He is not legally bound to render medical services either for the injured workman or for the workmen's compensation bureau. He may make such legal contract as he sees fit and therefore he may contract with the injured workman without reference to the bureau. In *Hannon v. Interstate Power Co.*, 65 S. D. 493, 275 N. W. 358, construing the workmen's compensation act of South Dakota, which in all respects here material is similar to the North Dakota act, a physician who had rendered services to an injured employee instituted action against the employer. The employer defendant set forth that it "was operating under the Workmen's Compensation Law . . . and that the industrial commissioner had exclusive jurisdiction." The Supreme Court of South Dakota in that case pointed out that "physicians are neither employers [n]or employees within the meaning of the act and are not within the class of persons who can either elect or refuse to come under the provisions of the law." While under the North Dakota law there is no liberty of election as to whether an industry shall or shall not come within the provisions of the workmen's compensation act, nevertheless physicians are not one of those who must render service. If the defendant Scott employed the plaintiff physician to furnish medical service for himself he must pay the reasonable value of those services when no express agreement was made as to the amount of the fees, and this is so regardless of what amount the workmen's compensation bureau may allow for medical services. The court according concluded that Scott's demurrer was properly overruled. The court expressly stated, however, that in sustaining the action of the trial court in this respect it was not determining any right the physician might have to compel payment out of the workmen's compensation fund, since that matter was not involved in determining the propriety of the trial court's action with respect to Scott's demurrer.

The Supreme Court held, however, that the physician could not properly maintain a suit against the workmen's compensation bureau since it was not a legal entity subject to suit. The Supreme Court accordingly reversed the action of the trial court in overruling the demurrer interposed by the workmen's compensation bureau.—*Henderson v. Scott, 10 N. W. (2d) 490 (N. D., 1943).*

Society Proceedings

COMING MEETINGS

American Society of Anesthetists, New York, Dec. 9. Dr. McKinnie L. Phelps, 745 Fifth Ave., New York 22, Acting Secretary.

Annual Forum on Allergy, St. Louis, Jan. 22-23. Dr. Jonathan Forman, 394 East Town St., Columbus, Ohio.

Association for Research in Nervous and Mental Diseases, New York, Dec. 17-18. Dr. Thomas E. Bamford Jr., 115 East 82d St., New York 28, Secretary.

Southern Surgical Association, New Orleans, Dec. 7-9. Dr. Alton Ochsner, 1430 Tulane Ave., New Orleans, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1933 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Hygiene, Baltimore

38:113-224 (Sept.) 1943

*Field Studies on Immune Response to 17D Yellow Fever Virus: Relation to Virus Substrain, Dose and Route of Inoculation. J. P. Fox, S. L. Kossobudzki and J. F. Da Cunha.—p. 113.
Immunization to Typhoid and Paratyphoid Fevers. D. Longfellow and G. F. Luippold.—p. 139.
Behavior of 17D Yellow Fever Virus in Rhesus Monkeys: Relation to Substrain, Dose, and Neural or Extraneural Inoculation. J. P. Fox and H. A. Penna.—p. 152.
Varieties of Salmonella Isolated in Florida During 1942. Mildred M. Galton and Alice Lee Quan.—p. 173.
Experimental Studies on Trypanosoma Cruzi Infection and Reticuloendothelial Blockade in Rats. Nadene Denison.—p. 178.
Alcohol Preserved Tissue Cultivation Medium: Methods of Preparation and Use and Results Obtained in Cultivation of Nyctotherus Cordiformis. E. C. Nelson.—p. 185.
*Field Study of Alum Precipitated Combined Pertussis Vaccine and Diphtheria Toxoid for Active Immunization. Pearl L. Kendrick.—p. 193.
Transmission Experiments with Spirochaeta Turicatae and Spirochaeta Venezuelensis with Four Species of Ornithodoros. L. Mazzotti.—p. 203.
Relation Between Scarlet Fever Morbidity and Streptococcus Carrier Rates. F. F. Schwentker.—p. 207.
Malaria Infections by Four Species of Plasmodium in Duck and Chicken and Resulting Parasite Modifications. R. D. Manwell.—p. 211.

Immune Response to 17D Yellow Fever Virus.—Fox and his associates report 3 large scale yellow fever vaccination experiments. In the first experiment, conducted on a group of 550 nonimmune persons, the antigenicity of 4 substrains of 17D virus was studied. Small differences in the degree of immune response suggested that substrain 17D-NY 104 and substrain EP were slightly more antigenic. Evidence that small virus doses might result in a better immune response than larger doses was also obtained. In the second experiment it was established on the basis of a study of 15 vaccine lots that sister lots of vaccine prepared under the seed lot system are of uniform antigenicity. It was also established that the new type of serum free vaccine can be safely applied when the virus content permits in saline dilutions as high as 1 in 100, since of 918 vaccinated persons who were studied all became immune. Evidence was obtained that the immune response to 17D virus by persons up to the age of 14 years is directly related to age, the average protective capacity of the serums increasing with the age of the donors. In the third experiment evidence was obtained that human susceptibility to intradermally or intramuscularly inoculated virus of substrain 17D-NY 104 is greater than that to virus administered subcutaneously. No significant differences related to route of inoculation could be detected in the immediate immune response or in the average level of immunity one year after vaccination. The differences in susceptibility, therefore, are not considered sufficient to outweigh the technical advantages of the subcutaneous route. A considerable discrepancy was encountered in the safe minimum human immunizing doses indicated by the first and third experiments, since in the latter experiment the minimum dose was found to be but one fiftieth of that indicated in the initial experiment. Pending further study, the larger dose is recommended.

Combined Pertussis Vaccine and Diphtheria Toxoid.—Kendrick tested the use of alum precipitated, combined, diphtheria toxoid and pertussis vaccine in 1,326 preschool children in comparison with a noninjected control group of 1,511 children. The diphtheria antitoxic titers in the injected children demonstrated good response to the diphtheria toxoid in the combined antigen; and opsonocytophagic tests as well as tests for agglutinins and complement fixing bodies indicated response to the Haemophilus pertussis vaccine. The incidence of pertussis in the injected group of 0.9 attack per hundred person years of observation, in comparison with 10.4 attacks for the control group, indicated substantial protection due to the antigen used. The attacks which did occur among the vaccinated children were in general milder than those which occurred among the controls. The combined antigen offers a method for simplification of the immunization procedure by reducing the number of injections.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

50:293-432 (Sept.) 1943

*Roentgen Signs of Patent Ductus Arteriosus: Summary of 50 Surgically Verified Cases. M. S. Donovan, E. B. D. Neuhauser and M. C. Sosman.—p. 293.
Angiocardiography in Congenital Heart Disease: II. Patent Ductus Arteriosus. M. F. Steinberg, A. Grishman and M. L. Sussman.—p. 306.
Correlation Between Roentgenographic Changes in Lungs in Left Ventricular Failure and Circulation Rates. B. S. Epstein and D. Young.—p. 316.
Roentgenologic Appearance of "Bronchiogenic" Cysts. L. L. Robbins.—p. 321.
Discussion of Pathology and Histogenesis of Ewing's Tumor of Bone Marrow. A. P. Stout.—p. 334.
*Roentgenologic Aspects of Ewing's Tumor of Bone Marrow. P. C. Swenson.—p. 343.
Eosinophilic Granuloma of Tibia: Case Report. T. Horwitz.—p. 355.
Optimum Kilovoltage Technic in Military Roentgenography. A. W. Fuchs.—p. 358.
Roentgenographic Technics: Soft Tissue, Surface Detail, Foreign Body Localization. R. B. Barnes and D. McLachlan Jr.—p. 366.
Metabolic Changes Occurring as Result of Deep Roentgen Therapy: I. Effect of 200 Kilovolt Roentgen Therapy. D. Goldman.—p. 381.
Id.: II. Effect of 1,000 Kilovolt Roentgen Therapy. J. E. Robertson.—p. 392.
Radium Dosage for Linear Sources. B. S. Wolf.—p. 400.

Roentgen Ray Signs of Patent Ductus Arteriosus.—Donovan and his associates direct attention to the successful ligation of a patent ductus arteriosus, pointing out that a total of 50 cases have now been ligated or divided by Gross, with three deaths. Seven of these patients had subacute bacterial endocarditis (Streptococcus viridans infection), this being such a frequent complication that the authors considered it best to include them in this study. All the patients were studied preoperatively by roentgenologic methods and many of them postoperatively as well. The roentgenologic signs of patency of the ductus arteriosus have a definite value, although they do not prove the diagnosis, nor does their absence rule it out. A thorough roentgenographic study helps the surgeon evaluate the results of operation. The roentgenographic findings in 50 cases of patent ductus arteriosus verified at operation are presented. These findings in order of frequency are (1) dilatation of the pulmonary artery, (2) cardiac enlargement, (3) dilatation of the left auricle, (4) engorgement of the intrapulmonary vessels, (5) exaggerated pulsation of the left ventricle and the pulmonary artery, (6) "hilar dance," or pulsation of the vessels in the hili of the lungs.

Roentgenologic Aspects of Ewing's Tumor of Bone Marrow.—Swenson reviews a group of 26 cases of Ewing's tumor of the bone marrow which were collected from the files of the Presbyterian Hospital and the medical and surgical pathology departments of Columbia University College of Physicians and Surgeons. He shows that there is no typical roentgenologic picture of this disease and that a definite diagnosis can rarely be made from the roentgen examination alone. The disease may spread from the area of obvious primary involvement throughout the soft tissue of the marrow cavity without producing bone destruction which would betray its entire extent. It is important to take this fact into consideration in planning roentgen therapy. Though arrest of the disease has been reported from either surgery or roentgen therapy alone, the evidence suggests that a combination of the two methods will probably give the best results.

Archives of Ophthalmology, Chicago

30:421-584 (Oct.) 1943

New Answer to Question of Macular Sparing. F. H. Verhoeff.—p. 421.
*Penicillin and Sulfadiazine in Treatment of Experimental Intraocular Infection with Pneumococcus. L. von Sallmann.—p. 426.
Combined Intracranial and Orbital Operation for Retinoblastoma. B. S. Ray and J. M. McLean.—p. 437.
Exophthalmos Due to Chronic Orbital Myositis. J. H. Dunnington and R. N. Berke.—p. 446.
*Vitamin E (Wheat Germ Oil) in Treatment of Interstitial Keratitis. S. Stone.—p. 467.
Pathologic Anatomy of Myopic Eye with Regard to Newer Theories of Etiology and Pathogenesis of Myopia. F. W. Stocker.—p. 476.
Comparison of New Sensitometric Method with Usual Technics of Refraction. M. Luckiesh and F. K. Moss.—p. 489.
Tuberous Sclerosis. Elizabeth F. Constantine.—p. 494.
Reoperations for Glaucoma. W. S. Knighton.—p. 499.
Fixational Corneal Light Reflexes as Aid in Binocular Investigation. E. Kirmsky.—p. 505.
Quantitative Comparison of Methods of Administering Physostigmine. J. L. Boyd.—p. 521.
Clinical Study and Review of Tonometry. G. Freiman.—p. 526.

Penicillin and Sulfadiazine in Intraocular Infection.—According to von Sallmann, Diplococcus pneumoniae is considered the most frequent cause of severe intraocular infections following perforating injuries. Although statistical data on the types of pneumococci in cases of endophthalmitis and panophthalmitis following various perforating injuries are not available, it is justifiable to apply to intraocular infections the figures of the incidence of the various pneumococcic types present on the normal conjunctiva, because it is assumed that the micro-organisms from the surface of the conjunctiva and cornea, drawn into the eye by the penetrating foreign body, generally become the source of infection. By injections of a dilution of a twenty-four hour broth culture into the anterior chamber of adult chinchilla rabbits a fairly well standardized infection with a typical course was obtained and used as the test object. The action of two chemotherapeutic agents, sulfadiazine and penicillin, was studied. It was found that experimental intraocular infection caused by D. pneumoniae, type III and type X, was not stopped or was only temporarily improved by intensive local treatment with sodium sulfadiazine combined with sulfadiazine feeding when the treatment was initiated six hours after inoculation. Severe intraocular infection caused by types III, X and VII was usually checked by local treatment with the sodium or the ammonium salt of penicillin in solutions of 0.25 per cent and 0.1 per cent even when this treatment did not start until twelve to thirteen hours after inoculation. The local applications were generally continued from two to four days. Intraocular infection caused by the injection of types III and X with simultaneous injury of the lens capsule was treated successfully with penicillin in most instances in which the treatment was started six hours after injection and continued five to six days. The iontophoretic introduction of the penicillin salt in 0.1 and 0.25 per cent solutions was occasionally more effective than the corneal bath (0.25 per cent solution) when the infection was very severe. If repeated iontophoretic applications of 0.25 per cent solution were used because of the severity of the infection, corneal damage was noticed in the form of a large abrasion, which usually healed without residual opacity after a few days. Strains of types VI, XIV, XIX and XXIII showed in vitro the same sensitivity to penicillin as the strains of types III and VII used in the infection of eyes of rabbits.

Vitamin E in Interstitial Keratitis.—Stone used vitamin E in treating 10 patients with advanced interstitial keratitis. All had received ample antisyphilitic therapy in the past. Four had received artificial fever therapy a number of months earlier because of associated involvement of the central nervous system without its effectively influencing the course of the keratitis. Two patients were given artificial fever treatments shortly after therapy with vitamin E was begun. Vitamin E was mainly effective in hastening absorption of superficial and deep corneal exudates; it helped to relieve the associated photophobia and reduce excessive corneal vascularization and circumcorneal congestion. In extensive opacities and corneal scarring its administration for a period of months has produced a gradual and continuous clearing of the cornea with a return of normal vision. Riboflavin when administered alone or in combination with vitamin E was effective primarily in relieving some of the photophobia and reducing the extent of circumcorneal injection and capillary proliferation. It appeared to have no effect on the rate of absorption of corneal opacities and scars. It is suggested that vitamin E combined with vitamin B complex is a most valuable adjunct in the treatment of interstitial keratitis.

Archives of Surgery, Chicago

47:221-318 (Sept.) 1943

Carcinoid Tumors (So Called) of Ileum: Report of 13 Cases in Which There Was Metastasis. M. B. Dockerty and F. S. Ashburn.—p. 221.
Operation for Scaphocephaly. W. E. Dandy.—p. 247.
Suppurative Anterior Mediastinitis in an Infant Following Intrasternal Blood Transfusion: Operation and Recovery. M. M. Ravitch.—p. 250.
Therapy of Shock in Experimental Animals with Plasma and Serum Protein Solutions: III. Freezing Shock; Concentrated Plasma and Serum Therapy With and Without Amputation of Damaged Extremity. E. E. Muirhead, L. A. Kregel and J. M. Hill.—p. 258.
Frozen Shoulder; Periarthritis; Bicipital Tenosynovitis. R. K. Lippmann.—p. 283.
Progress in Orthopedic Surgery for 1942: Review Prepared by an Editorial Board of American Academy of Orthopaedic Surgeons.—p. 297.

Arkansas Medical Society Journal, Fort Smith

40:59-84 (Sept.) 1943

Analysis of Thyroid Surgery. J. H. Hayes.—p. 59.

40:85-102 (Oct.) 1943

Gallbladder Problem. R. L. Sanders.—p. 85.

Bull. of the U. S. Army Med. Dept., Washington, D. C.

69:1-90 (Oct.) 1943

*Ambulatory Treatment of Cerebral Concussion. E. W. Shearburn and E. H. Mulford.—p. 36.
Military Ski Fractures. W. E. Brown Jr. and M. J. Brown.—p. 42.
Perineal Urethrostomy for Drainage of Neurological Bladders. L. G. Lewis.—p. 46.
Communicable Disease Control at Camp Grant, Illinois. N. C. Bullock.—p. 49.
Dhobie Mark Dermatitis. T. Fitz-Hugh Jr., C. S. Livingood and A. M. Rogers.—p. 55.
Dermatitis Venenata Caused by Ink from Bichi Nut. S. P. Waud and H. Fein.—p. 59.
Code Neurosis. J. Chornyak.—p. 61.
Study of 1,000 Cases Separated from Army on Certificate of Disability for Discharge. R. E. Kinsey.—p. 64.
Fumigation of Barracks by Sulfur Dioxide. P. Zanca.—p. 76.
Atypical Neuralgia the Result of Impacted Teeth. F. E. Klee.—p. 79.
Use of Coliform Test in Controlling Quality of Pasteurized Milk. C. J. Babcock.—p. 81.
Inspection of Powdered Whole Milk. R. E. Thompsett.—p. 85.

Ambulatory Treatment of Cerebral Concussion.—Shearburn and Mulford report the results of treatment of 90 acute head injuries with cerebral concussion during a period of ninety-eight days in an evacuation hospital in Casablanca, North Africa. Unconsciousness varied from momentary to ninety-six hours, with an average of five and four tenths hours. For purposes of analyzing the early ambulation method of treatment the patients were divided into two groups. Group A includes patients on whom it was possible to utilize the method. This group contains 72 patients with head injury only or with head injury plus some other injury not requiring bed rest as a prerequisite of treatment. Group B includes cases in which it was not possible to use the early ambulatory method. The 18 cases in this group include basal skull fractures with drainage from the ears or nose and cases of head injury with concomitant injuries of the extremities or abdomen necessitating a longer period of bed rest than that required by the cerebral concussion. Other investigators pointed out that the incidence of post-traumatic intracranial hemorrhage is not increased by allowing the patient to be ambulatory soon after the return of consciousness. This observation is verified by their cases. The incidence of postconcussion symptoms appears to have been greatly reduced by early ambulation. The authors suggest that early ambulation may be the method of choice for treating such cases.

Connecticut State Medical Journal, Hartford

7:677-736 (Oct.) 1943

Clinical Epidemiology of Poliomyelitis. H. A. Wenner.—p. 679.
Mental Manifestations in Cardiovascular Disease. E. Kahn.—p. 683.
Reduction of Fractures. R. M. Yergason.—p. 686.
Relationship Between Referring Physician and Mental Hospital. D. J. MacPherson.—p. 689.
Cord Tumor. B. B. Whitcomb.—p. 693.
Management of Neurologic Syphilis in General Hospital by Malaria Inoculation. T. P. Murdock and D. J. Cohen.—p. 697.

Gastroenterology, Baltimore

1:821-910 (Sept.) 1943

Esophageal Pain. H. J. Moersch and J. R. Miller.—p. 821.
Nutritional Standards for Men in Tropical Climates. R. E. Johnson. —p. 832.
Problems in Gastric Diagnosis: Gastroscope as Supplementary Aid to X-Ray Examination. A. L. Cohn and J. Levitin.—p. 841.
Studies of Urobilinogen: II. Quantitative Urobilinogen Determinations in Differential Diagnosis of Jaundice. F. Steigmann and Josephine M. Dyniewicz.—p. 855.
Studies in Old Age: VII. Intestinal Absorption in Old Age. J. Meyer, Harriet Sorter, J. Oliver and H. Necheles.—p. 876.
Gastric Excretion of Sulfonamide Drugs. I. H. Einsel, E. N. Nixon, L. Gitman and J. M. Rogoff.—p. 882.

Journal of Clinical Investigation, Boston

22:635-762 (Sept.) 1943

Role of Extracellular Fluid in Maintenance of Normal Plasma Volume. J. V. Warren, A. J. Merrill and E. A. Stead Jr.—p. 635.
Concentration of Vitamin A in Blood Plasma During Pregnancy. O. Bodansky, J. M. Lewis and M. C. C. Lillienfeld.—p. 643.
*Penicillin: Its Antibacterial Effect in Whole Blood and Serum for Hemolytic Streptococcus and Staphylococcus Aureus. C. H. Rammelkamp and C. S. Keefer.—p. 649.
Observations on Urinary Excretion of Sulfadiazine. O. L. Peterson, R. A. Goodwin Jr. and M. Finland.—p. 659.
Estimation and Control of Postoperative Dehydration, with Aid of Hemoglobin and Plasma Protein Determinations. B. W. Seaman and E. Ponder.—p. 673.
Systemic and Renal Circulatory Changes Following Administration of Adrenin, Ephedrine and Paredrinol to Normal Man. H. A. Ranges and S. E. Bradley.—p. 687.
Chloride Metabolism and Plasma Amino Acid Levels in Primary Atypical Pneumonia. K. Emerson Jr., E. C. Curnen, G. S. Mirick and J. E. Ziegler Jr.—p. 695.
Effect of Atropine on Absorption of Vitamin A. F. J. Ingelfinger, R. E. Moss and J. D. Helm Jr.—p. 699.
Interrelations of Serum Lipids. J. P. Peters and Evelyn B. Man.—p. 707.
*Arteriolar Lesions in Hypertension: Study of 350 Consecutive Cases Treated Surgically. Estimation of Prognostic Value of Muscle Biopsy. P. P. Fox, Naomi L. Fox and M. M. Peet.—p. 727.
Studies in Cancer: VII. Enzyme Deficiency in Human and Experimental Cancer. R. C. Rothrock, Nelicia Mayer, B. N. Horwitt and V. T. Saltzer.—p. 743.
Binding of Sulfonamide Drugs by Plasma Proteins. Factor in Determining Distribution of Drugs in Body. B. D. Davis.—p. 753.

Antistaphylococcic and Antistreptococcic Action of Penicillin.—The action of penicillin against Streptococcus hemolyticus and Staphylococcus aureus was studied by Rammelkamp and Keefer using whole defibrinated blood and serum. Whereas normal serum containing no penicillin presented no bactericidal action, whole blood had a slight antibacterial action, owing to the presence of phagocytic cells. Addition of 0.3 Florey unit of penicillin per cubic centimeter of whole blood resulted in a striking increase in the bactericidal action. This effect was not dependent on phagocytosis, since a similar action was observed in the serum on addition of the same amount of penicillin. The blood and serum withdrawn from normal subjects injected with 20,000 Florey units of penicillin exhibited a definite bactericidal and bacteriostatic effect against staphylococci and streptococci. The degree of antibacterial action observed in whole blood after the administration of penicillin was directly related to its concentration in the serum. As the concentration increased there was a rapid rise in the bactericidal power of the blood. Maximal action against Streptococcus haemolyticus was produced by concentrations of 0.019 to 0.156 Florey units per cubic centimeter of serum. Against Staphylococcus aureus maximal bactericidal effect was exhibited by concentrations of at least 0.156 unit per cubic centimeter. The antistaphylococcic and antistreptococcic effect produced by adding or injecting sulfathiazole and sulfadiazine was compared to that of penicillin. The observations showed that both in vitro and in vivo the antistreptococcic action of whole blood containing only 0.07 unit of penicillin per cubic centimeter of serum is much greater than that of whole blood containing 5.1 mg. of sulfadiazine per hundred cubic centimeters of blood. Against Staphylococcus aureus sufadiazine exhibited only a slight bacteriostatic effect at concentration of 5.1 mg. per hundred cubic centimeters, while pronounced antibacterial effect was observed by penicillin at concentration of 0.039 unit per cubic centimeter of serum.

Arteriolar Lesion in Hypertension.—In order to obtain data of prognostic value for the results of supradiaphragmatic splanchnicectomy in hypertensive patients, the Foas and Peet measured in biopsy material the ratio of the thickness of the wall to the diameter of the lumen (W/L) of the arterioles of skeletal muscles. Three hundred and fifty cases of arterial hypertension were studied. All patients were submitted to supradiaphragmatic splanchnicectomy and lower dorsal sympathetic ganglionectomy and followed from nine months to seven years after the operation. The degree of thickening of the arteriolar wall was statistically compared to the severity of other signs and symptoms and to the therapeutic results. A significant correlation was found between increase in W/L ratio and evidences of damage to the vascular system such as elevation of the blood pressure and vascular changes in the eyegrounds. As a rule, patients with greater degree of arteriolosclerosis also exhibited more severe cardiac and renal symptoms. There was also a definite correlation between the W/L ratio and the therapeutic results measured by reduction of blood pressure, improvements in vascular lesions of the eyegrounds, improvement in renal and cardiac functions and mortality rate. The percentage of patients improved was much higher among those with a low ratio and lower among those with a high ratio. The results are in agreement with the hypothesis that the surgical treatment of hypertension used gives better results when hypertension is due to a spasm of the arterioles or to a mild, reversible degree of hypertrophy of the muscle fibers in the tunica media and not when severe, permanent anatomic lesions have transformed the majority of the arterioles into rigid and narrow tubes.

Journal of Immunology, Baltimore

47:181-282 (Sept.) 1943. Partial Index

Immunochemical Studies on Human Serum: I. Human Complement and Its Components. E. E. Ecker, L. Pillemer and S. Seifter.—p. 181.
Detection of Virus of Mouse Encephalomyelitis in Intestines of Normal Kangaroo Rats. J. L. Melnick.—p. 231.
Histamine-Protein Complexes: Synthesis and Immunologic Investigation: I. Histamine-Asoprotein. N. Fell, Gertrude Rodney and D. E. Marshall.—p. 237.
Isolation and Characterization of Influenza A Virus (PR8 Strain). A. R. Taylor, D. G. Sharp, Dorothy Beard, J. W. Beard, J. H. Dingle and A. E. Feller.—p. 261.

Journal of Lab. and Clinical Medicine, St. Louis

28:1415-1534 (Sept.) 1943

Blood Pressure Fluctations in Bronchial Asthma: II. Effect of Epinephrine and Aminophylline. H. Osgood and F. E. Ehret.—p. 1415.
Pollen Surveys in United States: Critical Review. P. M. Gottlieb and E. Urbach.—p. 1426.
Relation of Length of Carbon Chain to Primary and Functional Toxicities of Alcohols. H. Welch and G. G. Slocum.—p. 1440.
Unusual Temperature Course in Infectious Mononucleosis. S. H. Rinzler and J. J. Hertz.—p. 1445.
Attempts to Obtain Better Results with Bacterial Antigen ("Vaccine") Therapy of Low Grade Chronic ("Focal") Infection: I. Possible Errors of Usual Methods. M. H. Stiles, C. Berens, W. B. Rawls and G. H. Chapman.—p. 1447.
Treatment of Experimentally Induced Type I Pneumococcus Pneumonia in Albino Rats: Comparative Study of Therapeutic Efficiency of Various Sulfonamides and Specific Rabbit Antipneumococcus Serum and Combinations of Two. E. H. Loughlin, R. H. Bennett, Mary E. Flanagan and S. H. Spitz.—p. 1455.
Simultaneous Performance of Weltmann Serum Coagulation Test, Cephalin Flocculation Test and Modified Takata-Ara Reaction as Aid in Differential Diagnosis of Liver Disease. M. Wachstein.—p. 1462.
Preparation and Properties of Dry Powdered Mixture of Sulfanilamide and Hemostatic Globulin. I. A. Parfentjev, Mary A. Goodline and F. L. Clapp.—p. 1465.

Journal of the Mount Sinai Hospital, New York

10:389-454 (Sept.-Oct.) 1943

Béla Schick Lecture: Choice of Time and Type of Operation in Surgery of Early Life. W. E. Ladd.—p. 389.
Case of Neurofibromatosis in Child 5¾ Years of Age. Béla Schick.—p. 399.
Excision of Teratoma of Anterior Mediastinum. H. Neuhof.—p. 402.
Cervicomediastinal Lymphangioma (Cystic Hygroma): Report of 2 Cases in Infants. E. E. Artzheim.—p. 404.
Adenoma of Bronchus. H. Hennell.—p. 411.
Servicothoracic Neurofibromatosis: Case. G. J. Ginandes.—p. 414.
Huge Ganglioneuroma of Mediastinum. C. B. Rabin.—p. 420.
Transitional Cell Carcinoma of Thymus in Child: Follow-Up Report. A. H. Aufses.—p. 423.
Neuroblastoma of Mediastinum. F. Bridge.—p. 426.
Metastatic Carcinoma of Lung. A. L. Florman.—p. 429.

Journal of Nat. Cancer Inst., Washington, D. C.

4:1-130 (Aug.) 1943. **Partial Index**

Adaptation of Transparent Chamber Technic to Mouse. G. H. Algire.—p. 1.
Estimation of Growth Rates of Tumors. H. F. Blum.—p. 21.
Morphology and Growth of Subcutaneous Tumors Induced with Carcinogenic Hydrocarbons in Strain C3H Male Mice. M. B. Shimkin and W. R. Bryan.—p. 25.
Ultracentrifugal Studies of Some Complexes Obtained from Mouse Milk, Mammary Tumor and Other Tissues. H. Kahler and W. R. Bryan, with technical assistance of H. M. Sipe.—p. 37.
Method for Quantitative Morphologic Analysis of Tissues. H. W. Chalkley.—p. 47.
Depolymerases for Yeast and for Thymus Nucleic Acids in Normal and Neoplastic Tissues. J. P. Greenstein.—p. 55.
Colloid Osmotic Pressure of Serums of Rats Bearing Transplanted Jensen Sarcoma. J. P. Greenstein and J. W. Thompson.—p. 63.
Serologic and Anaphylactic Reactions of Cathepsins of Normal and Neoplastic Tissues. Mary E. Maver and M. K. Barrett.—p. 65.
Accuracy and Reproductibility in Induction of Tumors with Ultraviolet Radiation. H. F. Blum.—p. 75.
Chemical Treatment of Tumors. V. Isolation of Hemorrhage Producing Fraction from Serratia Marcescens (Bacillus Prodigiosus) Culture Filtrate. M. J. Shear and F. C. Turner, with technical assistance of A. Perrault and Theresa Shovelton.—p. 81.

Journal of Nutrition, Philadelphia

26:219-326 (Sept.) 1943. **Partial Index**

Effect of Cooking With and Without Sodium Bicarbonate on Thiamine, Riboflavin and Ascorbic Acid Content of Peas. Cornelia H. Johnston, Louise Schaner, S. Rapaport and H. J. Deuel Jr.—p. 227.
*B Vitamins in Honey. G. Kitzes, H. A. Schuette and C. A. Elvehjem.—p. 241.
Influence of Thiamine Intake of Pig on Thiamine Content of Pork with Observations on Riboflavin Content of Pork. R. C. Miller, J. W. Pence, R. A. Dutcher, P. T. Ziegler and M. A. McCarty.—p. 261.
Dietary Requirements for Fertility and Lactation: XXXI. Further Studies on Role of P-Aminobenzoic Acid and Inositol in Lactation and Growth of Albino Rat. B. Sure.—p. 275.
Pantothenic Acid Requirement of Hens Fed a Heated Diet. M. B. Gillis, G. F. Heuser and L. C. Norris.—p. 285.
Inadequacy of Eight Synthetic B Vitamins for Nutrition of Puppies—Unknown Factor (Factors) in Yeast and Probably Liver. J. P. Lamboy and E. S. Nasset.—p. 293.
Antiacrodynic Potency of Seed Oils. D. S. Anthony, F. W. Quackenbush, A. Ihde and H. Steenbock.—p. 303.
Effect of Commercial Clarification of Vitamin Content of Honey. M. H. Haydak, L. S. Palmer, M. C. Tanquary and A. E. Vivino.—p. 319.

B Vitamins in Honey.—Kitzes and his collaborators state that microchemical and microbiologic determinations showed the presence in honey of thiamine, riboflavin, nicotinic acid, pantothenic acid, pyridoxine, biotin and folic acid. The variation among samples was very large, owing perhaps to the source of the honey and the number of pollen grains present. Comparison of new and aged honeys revealed a decrease in the pantothenic acid content of the latter.

Kentucky Medical Journal, Bowling Green

41:329-364 (Oct.) 1943

Benign Tumors of Stomach. S. T. Simmons and F. D. Coleman.—p. 338.
Some Obstetric and Gynecologic Observations. T. A. Griffith.—p. 344.
Schizophrenic and Organic Reaction Type of Psychoses. I. Kimbell.—p. 346.
Report of Eighty Cases of Meningitis from Medical Service of Station Hospital, Nashville Army Air Center, Nashville, Tennessee. A. C. McCarty and G. L. Infield.—p. 348.
Hypernephroma with Metastases. S. E. Johnson and V. Stabile.—p. 351.
Tumor of Lower Lumbar Spine. C. Wood and E. L. Shiflett.—p. 352.
Termination of Pernicious Vomiting of Pregnancy by Dilation of Cervix. W. P. McKee and G. E. McMunn.—p. 354.

Michigan State Medical Society Journal, Lansing

42:797-848 (Oct.) 1943

Skin in Endocrinology. C. J. Marinus.—p. 797.
Place of Hormone Assays in Clinical Medicine. G. M. Riley.—p. 803.
Hypersensitivity: Neglected Phase of Allergy. C. F. Brumk.—p. 808.
Intracapsular Cataract Extraction, with Modification of Dimitry's Suction Syringe. J. C. Gemeroy.—p. 812.
Vaccine Therapy in Treatment of Uveitis. H. A. Dunlap.—p. 815.
Significance and Management of Joint Pain. C. J. Smyth and R. H. Freyberg.—p. 818.
Early Unfavorable Responses to Sulfonamide Derivatives on Second Administration. L. M. Folkers.—p. 823.

New York State Journal of Medicine, New York

43:1567-1678 (Sept. 1) 1943

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Principles and Methods of Desiccation of Plasma. F. Oppenheimer.—p. 1611.
Clinical Application of Plasma. S. O. Levinson.—p. 1615.
Bilateral Blindness Due to Lesions in Both Occipital Lobes: Report of 6 Cases, 4 with Necropsy. H. A. Riley, J. C. Yaskin, M. E. Riggs and A. S. Torney.—p. 1619.
Significance of Increased Menstrual Bleeding in Women over Forty. C. L. Randall.—p. 1635.

43:1679-1790 (Sept. 15) 1943

Occupational Acne. L. Schwartz and S. M. Peck.—p. 1711.
Early Diagnosis of Carcinoma of Colon. B. B. Crohn.—p. 1719.
Diagnostic and Therapeutic Value of X-Rays in Carcinoma of Colon. E. C. Koenig and G. J. Culver.—p. 1723.
Carcinoma of Large Bowel. F. F. McGauley.—p. 1727.
Peritonitis Secondary to Perforation in Carcinoma of Colon. P. D. Allen.—p. 1732.
Certain Aspects of Present Day Typhoid Epidemiology. A. D. Rubenstein.—p. 1736.
Original Studies on Internal Dynamics of Intracapsular Cataract Extraction. J. Goldsmith.—p. 1739.
Resistance to Cure in Psychotherapy. L. R. Wolberg.—p. 1751.

North Carolina Medical Journal, Winston-Salem

4:365-422 (Sept.) 1943

One Stage Combined Abdominoperineal Resection: Problems Concerned with Selecting Patients and Performing Operation. C. W. Mayo.—p. 365.
Certain Harmful Effects of the Sulfonamide Drugs. J. P. Hendrix.—p. 371.
Histoplasmosis: Report of Case in North Carolina. W. C. Thomas and R. P. Morehead.—p. 378.
Operative Treatment of Fracture of Patella. L. D. Baker and H. J. Schaubel.—p. 382.
Therapy in Older Patients. W. M. Johnson.—p. 385.

Oklahoma State Medical Assn. Jour., Oklahoma City

36:369-414 (Sept.) 1943

Naval Medicine. L. B. Marshall.—p. 369.
Trichomonas Vaginalis. K. J. Wilson.—p. 372.
Transmission of Diseases by Blood Transfusions. A. R. Wiley.—p. 374.
Etiology of Malignant Neutropenia. W. H. Gordon.—p. 376.
Verumontanitis: Application of Sex Hormones. R. H. Akin.—p. 381.
Review of Management of Late Syphilis. C. P. Bondurant.—p. 382.

Pennsylvania Medical Journal, Harrisburg

46:1249-1408 (Sept.) 1943

Carcinoma of Right and Left Colon, Including Rectum. T. A. Shallow and B. F. Haskell.—p. 1263.
*Infusions Via Bone Marrow in Children. L. M. Tocantins, A. H. Price and J. F. O'Neill.—p. 1267.
Review of Superior Hypogastric Sympathectomies Over Period of Ten Years. T. K. Reeves and G. S. Lipman.—p. 1274.
Minor Roentgen Therapy. S. J. Hawley.—p. 1278.
Blood Gonadotropic Determinations in Relation to Toxemia of Pregnancy. H. M. Cohen, D. A. Wilson and W. F. Brennan.—p. 1282.
Systemic Symptoms in Peptic Ulcer and Biliary Tract Disease. M. E. Rehfuss.—p. 1286.
Wilms's Tumor. W. J. Daw.—p. 1293.
Operative Treatment of Prolapse of Uterus, with End Results. S. A. Chalfant and G. R. Wilson.—p. 1296.

Infusions Via Bone Marrow in Children.—Tocantins and his associates state that the upper third of the tibia and the lower third of the femur are the sites of choice for intramedullary infusions in infants. All infusions in their cases were made through these sites. Under no circumstances should the sternum be used in infants 3 years of age or less. The bony landmarks should be outlined before deciding on the site of the insertion of the needle. Little pressure is generally required to insert the needle into the bone of infants. The rate of injection should be slow. No material should be injected until marrow is

obtained by aspiration, but the quantity of marrow aspirated should be only about 0.1 cc. or less. The ages of the children in whom the authors performed infusion via bone marrow varied between 2 days and 5 years. Forty of the group of 52 are still living. With one exception there have been no reactions following the infusion. The exception was the appearance of a superficial pustule at the point of entrance of the needle in an infant three days after an infusion through the lower portion of the femur. It was found that the dressing applied over the puncture wound had been kicked away and fecal matter smeared over the area. The pustule was incised, and it healed without complications. Roentgen ray examination of the underlying bone revealed no change. Although no complication such as osteomyelitis has been found, it is reasonable to expect that it may take place if aseptic precautions are not rigidly followed. Bleeding promptly ceased following the transfusion of blood through the marrow of the tibia in a hemophilic child. Physiologic or near physiologic solutions (citrated blood, plasma, isotonic solution of sodium chloride and 5 per cent dextrose solution) have been the only fluids used in this group. It seems desirable to avoid the use of hypertonic solutions by this route, in view of their possible sclerosing effect on adjacent marrow.

Southwestern Medicine, Phoenix, Ariz.

27:185-210 (Aug.) 1943

Penicillin, Historically Considered. C. E. Yount.—p. 189.
Early Treatment of Compound Fractures. R. G. Packard.—p. 194.
Results of Thoracoplasty (Five and Ten Year Review). V. S. Randolph. —p. 199.

Surgery, Gynecology and Obstetrics, Chicago

77:337-448 (Oct.) 1943

*Studies on Therapy of Hemorrhagic Shock: I. Effects of Iso-Osmotic and of Concentrated Serum and Plasma in Normal Dogs. H. Necheles, S. O. Levinson, Martha Janota, R. E. Weston and V. Weissman.—p. 337.
New Operative Approach to Knee Joint. K. Coonse and J. D. Adams. —p. 344.
Study of Smaller Blood Vessels in Burned Dogs and Cats. R. G. Abell and I. H. Page.—p. 348.
Atraumatic Amputation Through Lower Thigh: Experiences with Its Use in Peripheral Vascular Disease. F. Pearl and M. Misrack. —p. 354.
Fractures of Zygoma: Report of 72 Consecutive Cases. W. A. Coakley and M. F. White.—p. 360.
*Sulfanilamide Ointment Treatment of Severe Burns. E. I. Evans and M. J. Hoover.—p. 367.
Wound Healing—Experimental and Statistical Study: IV. Results. S. A. Localio, W. Casale and J. W. Hinton.—p. 376.
Reasons Why Orthodox Is Better Than Kenny Treatment of Poliomyelitis. J. A. Key.—p. 389.
*Novocain Injection for Minor Injuries in Military Service. F. C. Murphy and R. W. Postlethwait.—p. 397.
Effects of Rapid Compression Waves on Animals Submerged in Water. S. L. Clark and J. W. Ward.—p. 403.
Osteogenic Sarcoma: I. Modified Nomenclature and Review of 118 Five Year Cases. I. MacDonald and J. W. Budd.—p. 413.
Gastrostomy for Retrograde Esophageal Dilatation: Leak Proof Dressing and Method of Concealing String. J. J. Pressman.—p. 421.
Arterial Blood Supply of Pancreas. J. M. Pierson.—p. 426.
Effect of Estrogenic Substance on Uterine Motility During Labor: Study of 42 Patients with Lôrând Tocograph. D. P. Murphy.—p. 433.

Iso-Osmotic and Concentrated Serum and Plasma in Hemorrhagic Shock.—Necheles and his collaborators demonstrate that iso-osmotic plasma protein solutions are more effective in the treatment of posthemorrhagic shock in normal dogs than are concentrated solutions. The relative clinical improvement, restoration of blood pressure and plasma volume, ability to tolerate further blood loss and survival times strikingly demonstrate the superiority of iso-osmotic over concentrated material. The assumption underlying the use of four times concentrated plasma protein solutions in the treatment of shock has been that these solutions can increase the plasma volume as efficiently as larger amounts of iso-osmotic plasma or serum by elevating the intravascular osmotic pressure and thereby withdrawing fluid from the extravascular tissue spaces. However, when there has been considerable external hemorrhage the extravascular reserves are greatly depleted as fluid shifts into the circulation in the early physiologic compensations for the blood lost from the body. Consequently, in many of the normally hydrated animals which received the four times concentrated material the plasma volume recovery was poor in comparison with that of the animals which received comparable amounts of protein but additional fluid in the iso-osmotic material. It is to be expected that the treatment of hemorrhagic shock with such concentrated solutions would be even less effective in animals which have been dehydrated by the withholding of water before the experimental hemorrhages.

Sulfanilamide Ointment Treatment of Burns.—Evans and Hoover outline a method of local treatment of burns, which they employed in 126 cases. What they have to say regarding sulfonamide ointments in burns applies only to ointments with a fatty base, because in comparative studies on the relative absorption of sulfonamides from a fatty or water dispersible base they found that dangerously high blood levels of sulfonamides resulted when a water dispersible base was employed. The ointment used was made from equal parts of sterile hydrous wool fat and cold cream to which was added sterile sulfanilamide powder to a 6 per cent concentration by weight. Sulfanilamide, rather than sulfathiazole or sulfadiazine, has been used because sulfanilamide results in less severe unfavorable reaction than do the other two sulfonamides. When the burned areas are thoroughly cleansed and debrided, a liberal quantity of the oil base sulfanilamide ointment is applied to all burned areas. Almost as soon as the burned surface is covered with sulfanilamide ointment the patient is relatively free from pain. Other local anesthetic agents are unnecessary. Sterile surgical compresses are placed over the ointment. Next a pressure dressing is applied, but not too much pressure should be exerted lest nerve injury result. The patient is put to bed on sterile sheets and proper splinting of the extremities is carried out. If a burn is seen late or is infected, warm continuous saline compresses are placed at once on the burned areas, and these are used until the burned areas are surgically clean. If the infection is severe, sulfathiazole is given by mouth and sulfanilamide powder is used locally.

Procaine Hydrochloride Injection for Minor Injuries.—Murphy and Postlethwait treated 100 cases of minor injuries by injecting procaine hydrochloride into the injured part as suggested by Leriche. The most tender points are identified with finger pressure and are marked with gentian violet, and the skin is prepared with tincture of merthiolate or iodine. A wheal is raised with 1 per cent procaine hydrochloride at the points marked with gentian violet. If a hematoma can be found and injected, an excellent result may be expected. When no hematoma can be located, the area in general is infiltrated and is lightly massaged to aid in diffusion. Active motion of the part is insisted on. If the joint involved is a weight bearing joint, an adhesive strapping or tight bandage is applied to encourage absorption of edema fluid and to protect the joint from further injury. The most commonly treated injuries and also the most responsive to the therapy were sprains of the ankle. Rarely was more than the initial treatment necessary except in knee and back injuries. If favorable results are not obtained after two or three injections, further injection is not indicated. Procaine hydrochloride injection decreases the period of disability, adds greatly to the comfort of the patient and permits an early return to normal activity.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

51:349-388 (Sept.) 1943

*Massive Breast Hypertrophy in Adolescence: Notable Case. G. A. Fisher, G. C. Schauffler, C. E. Gurney and G. H. Bendshadler.—p. 349.
Twenty-Nine Years' Experience with Cesarean Section. E. M. Lazard. —p. 356.
Present Status of Tetanus Prophylaxis. P. Campiche.—p. 359.
Postoperative Intestinal Distention. H. S. Horton.—p. 368.
Recurrent Placenta Previa. P. H. Fried.—p. 377.

Massive Breast Hypertrophy in Adolescence.—The subject of the report by Fisher and his collaborators was a girl aged 11 whose breasts within a period of seven months began and completed a development to a total of 35 pounds (16 Kg.); each breast weighed 17½ pounds (8 Kg.). Notable factors in this case were (*a*) the speed with which the condition developed, (*b*) the failure of endocrine therapy, (*c*) the absence of irregularity in the development of other sex characters or, in fact, in any other department of normal growth, and (*d*) the necessity for, and the success of, complete surgical removal or both breasts.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

16:255-286 (Sept.) 1943

"Stress" or "Fatigue" Fractures of Bone. J. B. Hartley.—p. 255.
Physical Aspects of Intracavitary Radium Treatment of Carcinoma of Cervix Uteri. G. J. Neary.—p. 263.
Kymography and Its Application to Esophageal Movement. J. W. McLaren.—p. 270.
Simplified Method of Studying Volume Dose Distribution. E. M. Ungar. —p. 274.
Subpubic Angle: Radiologic Aspects. E. P. Allen.—p. 279.
Radiographic Findings in Idiopathic Steatorrhea. J. F. Brailsford. —p. 283.

Journal of Royal Naval Medical Service, London

29:83-152 (April) 1943

Painful Foot. J. M. J. Jens.—p. 90.
Amnesia. G. Y. Stephenson.—p. 97.
Loss of Memory. H. Scott-Forbes.—p. 100.
Late Complications of Abdominal Wounds. F. Stubler.—p. 103.
Skin Diseases on Ships. I. Whittington.—p. 108.
Prevention of Unnecessary Casualties in Wartime. Medical Officer. —p. 110.
Gingivostomatitis, with Special Reference to Vincent's Gingivitis. J. Cuthbert and F. R. P. Williams.—p. 115.
Use of Plaster of Paris in First Aid or Emergency Treatment. A. I. L. Maitland.—p. 122.
Vaccination: Critical Study of Intradermal Method. E. R. Peirce and H. Willoughy.—p. 125.
Electric Shock Therapy. G. A. Betts.—p. 127.

Medical Journal of Australia, Sydney

2:121-140 (Aug. 15) 1943

Oxygen Lack and Carbon Monoxide. D. H. LeMessurier.—p. 121.
Temperature Hazard and Protection. R. D. Wright.—p. 122.
Muscle Balance and Its Importance in Selection of Air Crew. T. a'B. Travers.—p. 123.
Prevention of Psychiatric Disorders in Flying Personnel. D. F. Buckle.—p. 124.
Occupational Conditions of Ear and Nose in Airmen. N. E. H. Fox. —p. 126.
Problems of Acceleration. W. J. Simmonds.—p. 127.

2:141-160 (Aug. 21) 1943

Head Injuries. K. B. Noad.—p. 141.
Radiography of Head Injuries. E. W. Frecker.—p. 144.
Neurosurgical Sequelae of Head Injuries. W. L. Reid.—p. 146.
Cerebral Concussion. G. Phillips.—p. 148.

Proceedings of Royal Society of Medicine, London

36:503-572 (Aug.) 1943. Partial Index

*Scottish Diphtheria Immunization Campaign (1941 to 1942). A. Russell. —p. 503.
Electromyography in Clinical Medicine. G. Weddell.—p. 513.
Phases of Maturation, Fertilization and Early Development in Man. W. J. Hamilton, Gladys H. Dodds and Josephine Barnes.—p. 525.
Some Recent Work on Investigation and Treatment of "Ménière's" Disease. T. E. Cawthorne and C. S. Hallpike.—p. 533.
Chest Clinician's Viewpoint of Radiographs of Chest. G. S. Todd. —p. 565.

Scottish Diphtheria Immunization Campaign (1941 to 1942).—According to Russell, Scottish children were unprotected against diphtheria at the end of 1940, except for a small percentage and the country was experiencing a widespread epidemic. The immunization effort began only when the epidemic was approaching its peak. The immunization campaign has achieved a considerable degree of success, approximately 800,000 children having been inoculated. In Scotland diphtheria is at present much more an urban than a rural health problem. The gravis type of Corynebacterium diphtheriae is now the predominant type throughout a considerable part of the country. A definite increase in the incidence of diphtheria in the over 15 years group has taken place within the past three years. The diphtheria mortality figures for the past twelve months are much lower than any previously recorded in Scotland. A comparison of the diphtheria cases and deaths recorded in the nonimmunized and in the immunized groups of the population indicates that the chances of attack and death among the former are much higher than among the latter. On the average, with present diphtheria immunization methods a child is not so effectively protected against attack as against death.

Prensa Médica, Argentina, Buenos Aires

30:1169-1214 (June 30) 1943. Partial Index

*Tumoral Form of Pulmonary Mycosis. R. Denis, A. P. Heuddass and J. A. Marti.—p. 1189.
Infantile Paralysis. D. Vivoli.—p. 1199.
Surgery of Biliary Ducts. A. N. Canónica.—p. 1201.

Neoplastic Form of Pulmonary Mycosis.—Denis and his collaborators report the clinical history of a patient who for seven years presented periodic hemoptysis as the only complaint. The x-ray examination of the lungs showed a round shadow with air in the upper part located in the infraclavicular area of the left lung. Bacteriologic examination of the sputum revealed the presence of Aspergillus fumigatus. The intradermic test with trichophytin was intensely positive. Relief of hemoptysis followed iodine treatment. As far as the authors know, this is the second case in the literature of the neoplastic form of pulmonary mycosis.

Revista de la Asoc. Méd. Argentina, Buenos Aires

57: 219-280 (May 15-30) 1943. Partial Index

*Arterial Hypertension in Pregnancy: Magnesium Sulfate Therapy. D. E. Nölting and O. M. Althabe.—p. 245.
Azosulfamide and Tannic Acid in Burns. A. Giuliano.—p. 254.

Arterial Hypertension in Pregnant Women.—Nölting and Althabe administered magnesium sulfate to 65 pregnant women with arterial hypertension. The drug was given once or twice a day intravenously in doses of from 1 to 3 cc. of a 50 per cent solution in 10 or 20 cc. of hypertonic dextrose solution, or intramuscularly in doses of from 5 to 10 cc. of a 25 per cent solution. Physical and mental rest, sedatives and a proper diet were maintained at the same time. The results were favorable in 5 out of 8 patients with intercurrent eclampsia, in 17 out of 34 patients with preeclampsia, in 8 out of 13 instances of essential hypertension and in 5 out of 6 cases of vascular or renal disease. The blood pressure of these patients came down to normal or almost normal levels. In the remaining patients the results were either mediocre or nil. Diuresis increased in all of the patients, headache and edema diminished and the renal symptoms were improved. The treatment was given continuously up to the onset of labor. After its discontinuation for a short time a rise in the blood pressure took place and indicated resumption of the treatment. The drug is contraindicated in cardiac insufficiency of pregnant women. Otherwise it is harmless for the mother and for the fetus.

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*Roentgen Therapy of Leukemia. A. Lemos Ibáñez.—p. 157.
Early Puberty. Sara Schnitman and R. Pesino.—p. 172.
Rational Treatment of Infected Wounds. R. Galbiati.—p. 189.

Roentgen Therapy of Leukemia.—Lemos Ibáñez employed roentgen therapy in 23 cases of chronic leukemia and in 2 cases of acute leukemia. The dose of irradiations for the spleen was 100 roentgens for adolescents and 200 roentgens for adults. A similar dose was used in irradiating the lymph nodes and the bones. Irradiations were given two or three times weekly until the leukocytes were lowered to 15,000 or 20,000. Irradiation courses were repeated every two or three months. The irradiations were discontinued at any time if acute symptoms such as high fever, hemorrhage, cardiac or renal insufficiency or infection appeared. A progressive diminution of the erythrocytes was regarded as an indication for a temporary discontinuation of roentgen irradiation and for repeated blood transfusions, arsenicals, liver, iron and vitamin therapy. Teleroentgenotherapy was practiced on patients whose blood became radioresistant after a series of local treatments. The teleroentgen treatments were given twice weekly in doses of 10 or 15 roentgens for each treatment. The results were good in cases of chronic leukemia, either myeloid or lymphatic. An apparent clinical cure followed each series of roentgen treatments although the response on the part of the blood was slower and less complete as the disease progressed to its fatal issue. The average prolongation of life was three to four years. Roentgen therapy is contraindicated in acute leukemia. It is contraindicated also in myeloid metaplasia of the spleen compensating for aplasia of the bone marrow.

Book Notices

Life Is Too Short: An Autobiography. By C. Kay-Scott (Frederick Creighton Wellman). Cloth. Price, $3.50. Pp. 348. Philadelphia & New York: J. B. Lippincott Company, 1943.

A Surgeon's World: An Autobiography. By Max Thorek, M.D. Cloth. Price, $3.75. Pp. 410. Philadelphia & New York: J. B. Lippincott Company, 1943.

During the last few years there has been a veritable plethora of biographies and autobiographies of physicians, more it would seem than the reading public could easily absorb. Nevertheless the lives of some are so replete with unusual incident, so gregarious in their multiple associations with personalities of importance, so extraordinary because of difficulties overcome, that they have the quality of romance.

C. Kay-Scott, who feels that "Life Is Too Short," had a remarkable career as a medical missionary in Africa, a dean of two schools of tropical medicine, an auditor for the Singer Sewing Machine Company in Brazil, a mining engineer in the manganese mines, an entomologist, a novelist, a painter and a financier. He had also multiple marriages and no doubt innumerable other romantic interludes. His ability to tell the story is somewhat inhibited by a tendency to assume on the part of the reader an interest in erudite affairs of science similar to his own and by a failure frequently to interpret terminology which has interest only for the scientist. His book has, however, much of journalistic value; he deals with times and men and places that are familiar to those of the medical world.

The amazing aspect of the career of Creighton Wellman is the remarkable success that he achieved in a variety of vocations. He made a living for himself and for his family as a physician, as a teacher, as a businessman, as an engineer, as a writer and as a painter—and in one occupation at a time. The success that he achieved was of a high order, although obviously not of the highest order. Reference, however, to his many pamphlets and literary contributions is to be found in many a scientific work. Under the name of Creighton Wellman as a scientist he appeared in volume IX of "Who's Who in America," and under the name of Cyril Kay-Scott, with the pseudonym of Frederic Creighton, he appeared as an artist in volume XIX of "Who's Who in America." Thus he achieved at least this modicum of fame in two different professions.

The versatility as shown by his innumerable careers and his philosophy of life as exemplified in the biographies make him a subject of considerable interest to all those who enjoy reading autobiography. His book has in it much that will interest even the casual reader and certainly much to attract the medical reader.

The career of Max Thorek as told in his autobiography has in it also somewhat of variety, beginning with "Birth Abroad," proceeding to "Education in the United States" (largely financed by the avocation of musician), next moving through the period of internship into a career as a surgeon and an avocation as a photographer in which he has risen to great fame. The very special character of the practice of Dr. Thorek brought him into contact with people in the field of the theater, with Frederick Cook the explorer, with musicians and with the underprivileged. He has had special interest in writing so that several successful works in the field of surgery bear his name.

Outstanding in the life of Dr. Thorek is his sense of drama and a flair for the unusual. His research is devoted largely to such problems as those of rejuvenation and reactivation in the field of male sexuality, to plastic surgery of the breast, to electrical coagulation in the removal of the gallbladder. He traveled widely, principally, however, as a means of further education in order that he might meet men who had done work in these fields abroad.

One is impressed most, however, in reading this autobiography, with a feeling that the author is in a state of continuous wonderment at the success that has come to one who rose from the depths and who has had constantly to fight his way upward. Whether or not such conflict was the inevitable concomitant of the nature of the author's career, so that the difficulties were somewhat his own in their origin, is a question that each reader will have to determine for himself.

Written obviously for the public rather than for the strictly medical reader, there is much in the book from a medical point of view that will be better understood by the physician than by the lay reader. In the course of his autobiography Dr. Thorek philosophizes on the glands, euthanasia, whether to tell or not to tell the patient, the standards of medical education and of surgery in the United States and many similar subjects. The writing is florid. The author seldom uses the simple word when the larger one comes to his mind. The so-called oatmeal poultice of aluminum potassium nitrate as a means of treatment of osteomyelitis developed by La Porte had a brief day in medical literature and is now gone. The Steinach operation for reactivation and Voronoff's transplants have never achieved medical respectability. The general medical attitude toward cosmetic plastic surgery is still hesitant and the exact place occupied today by the International College of Surgeons is not yet clear. In any event, there still prevails an attitude of suspicion and doubt by the International Society of Surgery in relationship to the International College.

In "Who's Who in America" appears also the biography of Dr. Thorek with the bare skeleton of his life. His autobiography makes that skeleton come alive. It indicates success in surgery if recognition by medical organization here and abroad and successful authorship in surgery are a true measure of such accomplishment. The story is worth reading.

Advances in Internal Medicine. Volume I. Edited by J. Murray Steele, M.D., Welfare Hospital, New York University Division, Welfare Island, N. Y., and others. Cloth. Price, $4.50. Pp. 292, with illustrations. New York: Interscience Publishers, Inc., 1942.

The subjects considered in this volume include the use of the Miller-Abbott tube in disorders of the gastrointestinal tract, the use of insulin and protamine zinc insulin in diabetes, several chapters on the sulfonamides, chapters on influenza, hypertension, nephrosis and riboflavin deficiency. The various chapters constitute essentially reviews of the currently available literature on the subject prepared in each instance by men whose names are familiar as leaders in the fields concerned. Thus Keefer is responsible for one of the chapters on the sulfonamides and Irvine Page for the chapter on hypertension. Research has been so active in these subjects that almost every chapter could stand a few additional paragraphs at this time. However, for those who wish to bring themselves reasonably well up to date on the subjects concerned, the book will be exceedingly useful.

Primer of Allergy: A Guidebook for Those Who Must Find Their Way Through the Mazes of This Strange and Tantalizing State. By Warren T. Vaughan, M.S., M.D. Second edition. Cloth. Price, $1.75. Pp. 176, with illustrations by John P. Tillery. St. Louis: C. V. Mosby Company, 1943.

Dr. Vaughan's contributions to the literature of allergy are widely circulated. This little handbook will be most useful to any patient who suffers more or less with the symptoms of sensitization to foods or other substances. The illustrations, which include a number of excellent cartoons by Webster, and the humor of the text make it among the most readable of all the available books in the field concerned. There are tables of questions and answers which are most useful in replying to the many problems that arise so frequently in the practice of doctors who care for these patients. Notwithstanding the effort of the articles to simplify these explanations, the book will mean little to those who have not had a reasonably good general education.

Shipboard Medical Practice: A Handbook of Ship Sanitation and Emergency Medical Aid at Sea. By W. L. Wheeler Jr., M.D., Medical Director, Grace Line, Inc. Fabrikoid. Price, $1. Pp. 114, with 14 illustrations. New York: Cornell Maritime Press, 1943.

The author, who is medical director of the Grace Line, has had much experience in the medical problems arising at sea. The book is essentially a work on first aid but includes as well a good deal of drug therapy such as may be demanded under emergency conditions. There is a glossary and a list of supplies such as might be required on board ship, also forms for reporting cases.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

DIFFERENTIATION OF VIRAL PNEUMONIAS

To the Editor:—Is it possible to differentiate infallibly between the so-called virus pneumonia and an influenzal pneumonia? I realize that the influenza is also a virus infection. Paul S. Ross, Captain, M. C., A. U. S.

ANSWER.—The answer to this question depends on what the questioner means by using the term "influenzal pneumonia." Three forms of pneumonia have been so named: (1) the primary viral form caused by the filtrable viruses influenza A or influenza B, which is the only form properly called influenzal pneumonia, (2) the primary bacterial form caused by Haemophilus influenzae, or Pfeiffer's bacillus, and (3) various secondary bacterial pneumonias caused by pneumococci, hemolytic streptococci, staphylococci and others, either alone or in combination, occurring as a superinfection during true influenza.

1. True viral influenzal pneumonia as caused by viruses A or B is apparently uncommon and as far as is known has not been reported in man since the discovery of these viruses after 1933 or since the establishment in 1938 of "virus" pneumonia as a syndrome. Viral influenza pneumonia occurs commonly in experimentally infected animals. Cases of nonbacterial pneumonia were reported by Goodpasture in the epidemic of 1918-1919 presumably of influenza.

Clinically, viral influenza pneumonia cannot be differentiated from the current viral pneumonias. Differentiation could be made only by isolating the viruses of influenza or by the demonstration of their activity with the chicken erythrocyte agglutination test of Hirst or by the complement fixation reaction. Certain other forms of viral pneumonia can likewise be identified by the isolation of the respective causative viruses or by the complement fixation test (Reimann, H. A.; Havens, W. P., and Price, A. H.: Etiology of Atypical ["Virus"] Pneumonias, *Arch. Int. Med.* **70**:513 [Oct.] 1942).

2. Haemophilus influenzae pneumonia can be diagnosed by identifying the Pfeiffer bacillus in predominance in the sputum, in the blood or in the lung substance.

3. The secondary bacterial pneumonias may be recognized by the clinical characteristics of the specific forms or mixed forms as described in modern textbooks and by the isolation of the causative bacteria from the sputum, blood, lung or other exudates. Leukocytosis is one of the simplest, fairly reliable diffential factors in these infections as compared with the viral pneumonias.

PROGNOSIS IN CUSHING'S SYNDROME

To the Editor:—In general what is the prognosis in so-called Cushing's syndrome with insulin resistant diabetes? M.D., Massachusetts.

ANSWER.—The prognosis for a patient with Cushing's syndrome depends primarily on the underlying etiologic factors. Carcinoma and benign hyperplasia of the adrenal cortex and basophilic adenoma of the anterior pituitary are responsible for nearly every case. If the syndrome is the result of carcinoma of the adrenal cortex the prognosis is that of the carcinoma; it should be emphasized, however, that the virilizing adrenal carcinoma produces symptoms early in its development, often when it is still well localized and amenable to complete surgical extirpation. If the syndrome is associated with benign cortical hyperplasia or basophilic adenoma of the anterior pituitary, the prognosis is directly related to the severity and rate of progression of the symptoms, particularly hypertension and diabetes. Ordinarily a fully developed clinical picture is associated with a poor prognosis. In Cushing's series of 17 patients the average duration of life from onset of symptoms to death was five years. However, in some cases in which the symptoms are stationary, the life expectation is much longer. Little has been done therapeutically for the nonmalignant group; recent work by Albright, Parson and Bloomberg (*J. Clin. Endocrinol.* **1**:375 [May] 1941) involving the use of testosterone promises to be of some help.

CHILLS AND JAUNDICE IN PATIENT TAKING ACETYLSALICYLIC ACID AND PHENOBARBITAL

To the Editor:—I am anxious to know whether either acetylsalicylic acid or phenobarbital might be a causative agent in producing an acute hepatitis with jaundice. My patient has episodes of jaundice following chills. At these times the white cell count is around 20,000 and the icterus index is 33 per cent. There is no nausea or vomiting and only questionable tenderness of the liver. The liver edge is palpable and seems about normal or possibly a little firm. He has some pain occasionally under the left costal edge but not with these attacks. The spleen is not palpable or enlarged to percussion. Between attacks his white cell count is normal and he feels well. The attack subsides quickly and the fever (101 F.) disappears within twenty-four hours. He is highly sensitive to the brucellergen skin test and has been treated for undulant fever for many years. There is no anemia (hemoglobin 82 per cent Sahli, red cell count 5,000,000), and the reticulocyte count following attacks is 0.5 per cent. The stools are always normal in color. He has been taking acetylsalicylic acid and phenobarbital both several times a day for several years. George L. Walker, M.D., Griffin, Ga.

ANSWER.—The fact that this patient has episodes of jaundice and chills and has been taking both acetylsalicylic acid and phenobarbital several times a day for several years would make it difficult to assume that the drugs are causative unless on the basis of cumulative action. Various drugs, toxins and chemicals that are ordinarily nontoxic in therapeutic use may become toxic for certain human subjects who have been rendered more vulnerable by the presence of infectious diseases. There is no evidence in the literature that acetylsalicylic acid causes jaundice with chills and fever. However, there is evidance that some of the barbiturates and specifically phenobarbital may cause the development of sharp febrile reactions with some patients developing pronounced jaundice (Sollmann, Torald: Textbook of Pharmacology, ed. 6, 1942, p. 779) and occasionally an instance is reported in which death presumably resulted from large doses of phenobarbital with the liver showing definite fatty degeneration. It is known that experimental acute liver damage produced by carbon tetrachloride greatly increases the susceptibility of the rat to quickly acting barbiturates such as phenobarbital.

Conceivably the phenobarbital may serve as a hepatic toxic agent for this patient, but there is no evidence that acetylsalicylic acid could be causative of such liver damage. The obvious course to follow would be to have the patient stop this medication for a considerable period of time and then to resume it on a clinical experimental basis and observe whether it does produce chills, fever and jaundice.

MICROSCOPIC WORMS OBSERVED IN URINE SPECIMENS

To the Editor:—For the past few months in the routine examination of the urine of patients who gave no urinary symptoms I have found several live, eel-like microscopic worms, their length occupying about half the microscopic field under low power. These worms have been found in children as well as adults, male and female. The textbook description (Todd and Sanford's Clinical Diagnosis by Laboratory Methods) of this worm is Anguillula aceti. The books speak of it as contamination from the use of vinegar vessels or from a bottle that contained vinegar. As a matter of fact, these urines in which the worm was found were all freshly voided in a clean glass at my office. The questions are Why haven't I seen a similar worm in the past thirty odd years of routine urine examination of every patient? What is the significance of its presence? I. F. Floin, M.D., New York.

ANSWER.—The opinion is general among several directors of clinical laboratories that organisms such as those described are not observed in the urine if careful rules of cleanliness are followed. Probably these organisms are due to contamination of the glass in the office. It has been observed in one laboratory that urine collected in bottles that had been washed occasionally contained such organisms, but since the use of prepared paper containers they are never found. It is evident that glass may become contaminated, even though it appears to be clean on gross inspection.

LECITHIN

To the Editor:—In regard to the item in Queries and Minor Notes regarding lecithin which appeared in The Journal, September 25, I feel sure that it was not the intent of The Journal indirectly to promote a patent preparation such as the so-called "lecithin hydrate" (U. S. patent 2,090,537). The lecithin used in prepared foods such as bread, cake, confectionery, oleomargarine and shortening in concentrations ranging from 0.01 to 0.3 per cent is preponderantly soybean lecithin, substantially free from moisture, comprising a carrier of about 30 per cent soybean oil, associated with a phosphatide complex consisting of lecithin, cephalin and lipositol (inositol phosphatide). Lecithin is utilized commercially because of its colloidal and antioxidant properties. This is the same soybean lecithin which has been used successfully in the treatment of psoriasis and hypercholesterolemia, where the quantities administered daily vary from 9 to 15 Gm. A. Schard, American Lecithin Company, Inc.